

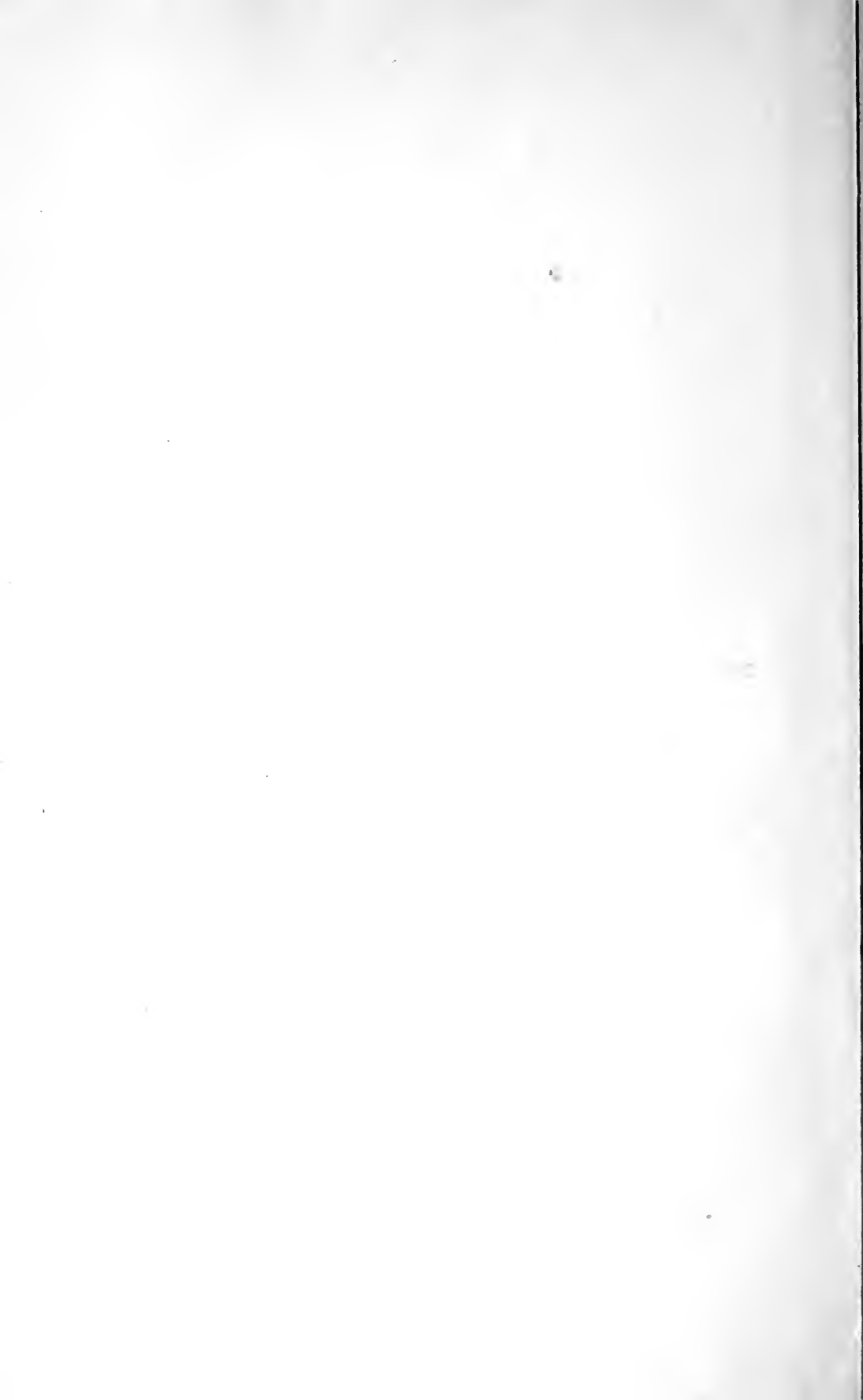


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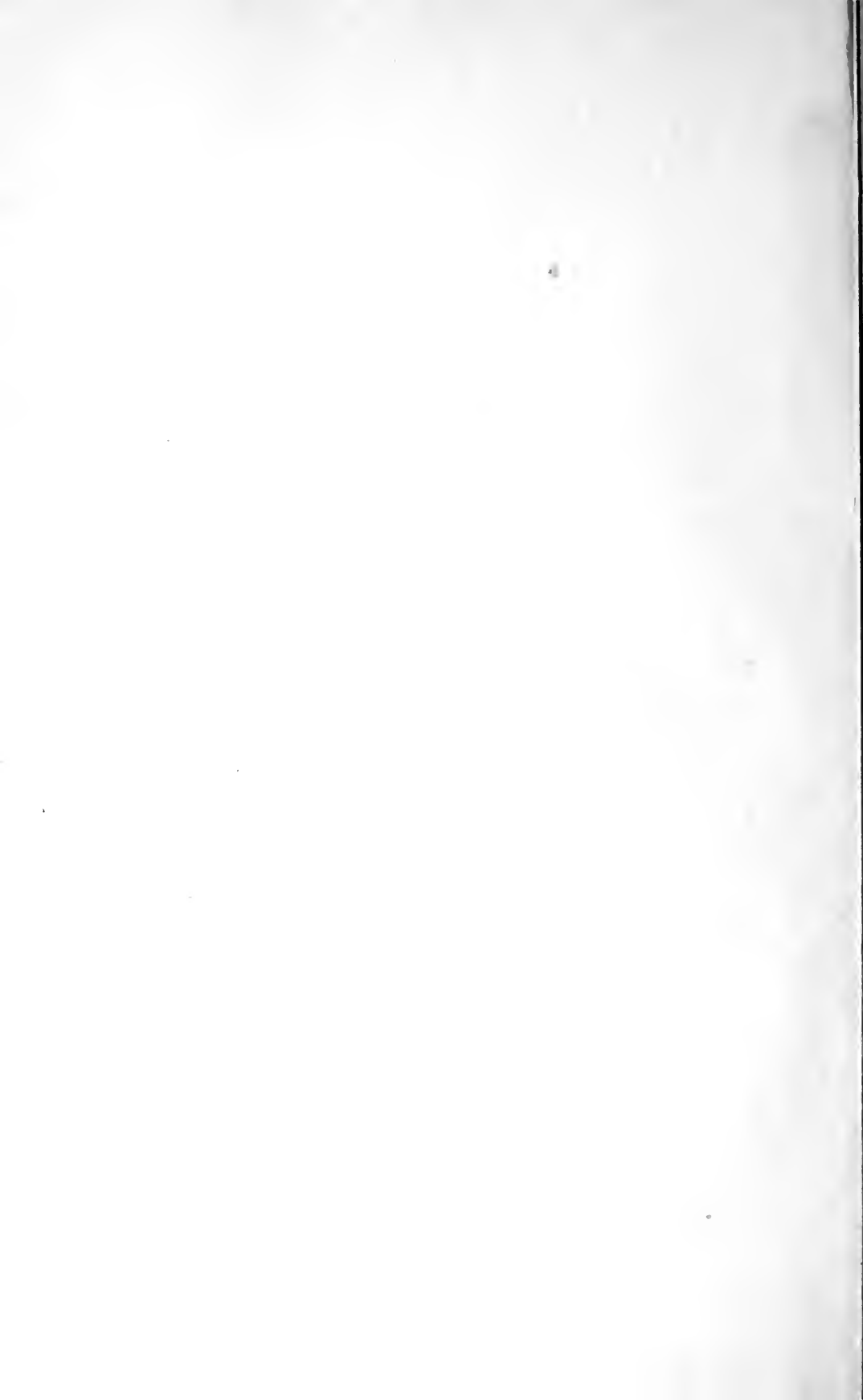


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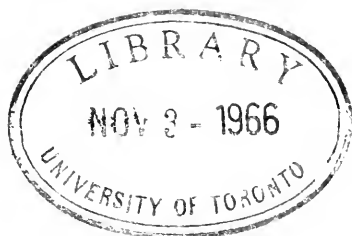
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NEW SERIES

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NO. 1

RECENT EXPLORATIONS IN NORTHWESTERN TEXAS

By WARREN K. MOOREHEAD

SOME years ago specimens were sent me from the Canadian valley in Texas. These seemed to indicate something different from the ordinary artifacts from the Southwest. As a result of the acquisition of these few objects two expeditions were sent up the Arkansas valley. The first passed through Oklahoma and Kansas, the local work in Oklahoma being left in charge of Professor J. B. Thoburn of the Oklahoma State Historical Society. This survey continued on up the main river to its source in Colorado. It crossed to the Canadian just over the New Mexico line, came down to Handley's ruins, and remained there three weeks, ending its season at Muskogee in November, 1917. Some thirty sites were found and mapped. In June, 1919, C. B. Franklin, Esq., was sent from Havana, Arkansas, through Oklahoma and up the main Arkansas into western Kansas, whence he crossed the panhandle of Texas to Handley's ruins. This survey mapped more than seventy sites. Mr. Franklin reported that ranchmen told him that there were other small stone buildings, or "Indian works," in out-of-the-way places farther up the river. Mr. Franklin paid particular attention to sites in Kansas along the main Arkansas, and on southern tributaries. He worked into northwestern Oklahoma, but found no particular change there. That is, the prevailing central Oklahoma types seem to continue up to the Cimarron river in the western panhandle of that State. His report is lengthy and he secured some 1500 specimens.

A search through the Peabody Museum library reveals very

scant reference to remains in the panhandle of Texas. Mr. Bandelier has stated that he heard of ruins on the upper Canadian, yet does not mention those farther down. I do not think he visited them.¹

J. T. Eyerly, Esq., wrote a brief article in "The Archaeological Bulletin," some twelve years ago. He presented a small map of the Handley ruins, then known as "Buried City." Dr. Fewkes visited the Handley ruins and excavated in one of the sites, securing



FIG. 1.—General view of one of the larger foundations in Handley's ruins, Ochiltree county, Texas.

therefrom a skeleton. Mr. James Mooney told me in Washington, some years ago, that he had heard of ruins in the northwestern part of Texas, and expressed the opinion that they should be examined. So far as I can ascertain at present, nothing was published concerning these ruins save Eyerly's brief account, and none of the observers seemed to have reported the larger groups of ruins located farther up the river.

After a careful study of the notes and specimens secured by Mr. Franklin, it appeared that the region was important archaeologically. Therefore, in January of this year I went to Oklahoma

¹ *Archaeological Institute of America*, Series IV, Part II, p. 137.

and Texas and spent considerable time traveling through the Canadian valley and tributaries of that stream. Returning east the latter part of March, arrangements were made for the financing of a large expedition. The specimens discovered in the course of explorations were to be placed in the University of Pennsylvania Museum. The survey located itself on the ranch owned by Messrs. Sam and Oscar Handley, Wolf creek, Ochiltree county. We found there more than twenty buildings of stone, varying from six or eight to twenty-three meters in diameter. (See fig. 1). The upper portions of all these have disappeared, and only the foundations remain, and these were from one to slightly over one meter in height. Ruins are scattered along a level plain, convenient to the creek, and covering approximately one square mile in area. Five of these were excavated, and the results added to those of the first and second surveys. Something like three hundred specimens were secured, chief among which were two restored vessels, one nearly complete vessel, and numerous metates, grinding stones, small minute arrow heads, stone knives, bone tools, etc.

About twenty-five miles southwest, on the main Canadian, is a similar group on the ranch of Archie King, Esq., and now named King's ruins. Farther up the river at Plemons are Cottonwood and Tarbox creeks. On both of these are more buildings or foundations than occur at either King's or Handley's. The Cottonwood and Tarbox ruins almost join, the creeks being no more than two miles apart, and the buildings and graves extend back from the cañon edges a considerable distance on the plain. In most of these structures the stones have been placed on edge and the space between outside and inside of wall filled with earth intermingled with small stones. The thickness of the walls ranges from one-fourth to one-half or occasionally two-thirds of a meter. (See fig. 2). All are in ruins, the stones scattered, and accurate observations difficult to make. In some of the smaller structures there appears to be a slightly raised ridge of hard earth. On, or in, this large stones were placed on edge. The interior was excavated somewhat and there is a distance of one to one and one-half meters from the inside floor to the tops of the larger stones. Still farther up the river, on Ante-

lope and Dixon creeks, about twenty-five miles north of the town of Panhandle, are other groups of ruins. In the valley of Antelope, on a second terrace, stand the foundations of a building nearly fifty meters in length. Proceeding to the Landergin ranch, forty miles north of Amarillo, is yet another group. This one is somewhat



FIG. 2.—Excavation to base of the wall of a building on Handley's ranch, showing stones in position.

different from the others in that it is situated in a high pinnacle approximately one hundred meters above the plain. The space upon the summit is less than an acre in extent, and there are twenty-two foundations, nearly all of which are circular. There is no water on this summit and the nearest spring is more than a mile distant. A creek, half a mile away, is dry save during the rainy season. At the time the hill-top was occupied these people may have been able to secure water, but our party was unable to find any trace of a spring nearer than the one mentioned. An aged Mexican (nearly 80) named Isabel, living at the ranch, states there is no water save that spring, and that the Kiowa and Comanche and Apache, at various times, camped on the hill-top for protection. He visited them fifty or sixty years ago. They found the ruins there, but used the stones in building low walls, fireplaces, etc. He says they did not make foundations for their lodges.

The expedition of 1920 did not extend operations beyond the Landergin ranch for the reason that it had collected sufficient photographs, specimens, and data for a preliminary survey of the region. We were informed by cattlemen, who are familiar with the range between Amarillo and the Pecos valley in New Mexico, that similar ruins continue almost to the head of the Canadian.



FIG. 3.—Figure cut in sandstone bluff, Sam Hallock's ranch, Cimarron county, Okla.
Thought by Thorburn to represent a Spaniard in armor.

The pottery becomes more of the Pueblo-Cliff Dweller type, and in some of the ruins farther west, painted pottery is said to be found. I am willing to accept this, since all information given us by cattlemen was found to be correct.

As a result of the last expedition, we have mapped nearly one

hundred sites or places where aboriginal work was in evidence. In Meade county, Kansas, we found irrigation ditches covering some seven to nine miles. This is the farthest east that such have been reported, so far as I can ascertain. Meade county was not settled in early times, but at a comparatively recent period. Broken pottery, flint chips, arrowheads, broken metates, and those curious objects made of lava, common in Arizona and New Mexico, were found.

In the Oklahoma panhandle, along the Cimarron, we discovered several series of pictographs. (See fig. 3). Whether these are the most extensive in the United States, I do not know, but they are scattered through eight miles of bluffs, and upwards of three hundred were noted by Mr. Johnson, Professor Thoburn, and myself. Quite a few were photographed and others drawn by us. They are com-

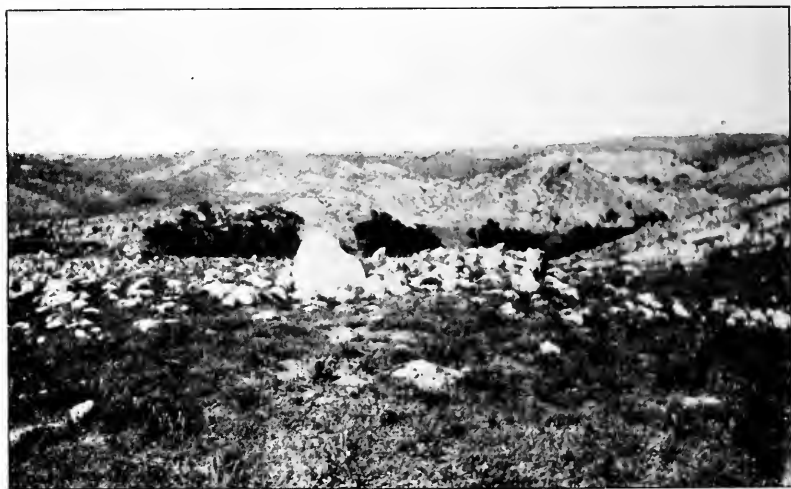


FIG. 4.—A ruin on Cottonwood creek, with graves in the foreground.

mon, we are told, along the river for miles. All should be studied and copied. Many of them were exceedingly well executed, are spirited, full of action, and evince no little artistic ability. Some of them are in color, others cut in the stone. Vandals have carved their names over and near many of these pictographs. The state of Oklahoma has been requested to take action to insure their preser-

vation. One large buffalo is painted life size, and will compare with the poorer of the paintings found on the walls of French caverns. We placed signs some distance from the pictographs, requesting people not to deface these remarkable examples of aboriginal pictorial art.

The survey of 1920 has opened a new field in American archaeology. (See fig. 4). On Cottonwood and Tarbox creeks alone, there are one hundred and nine stone graves in one group and more than

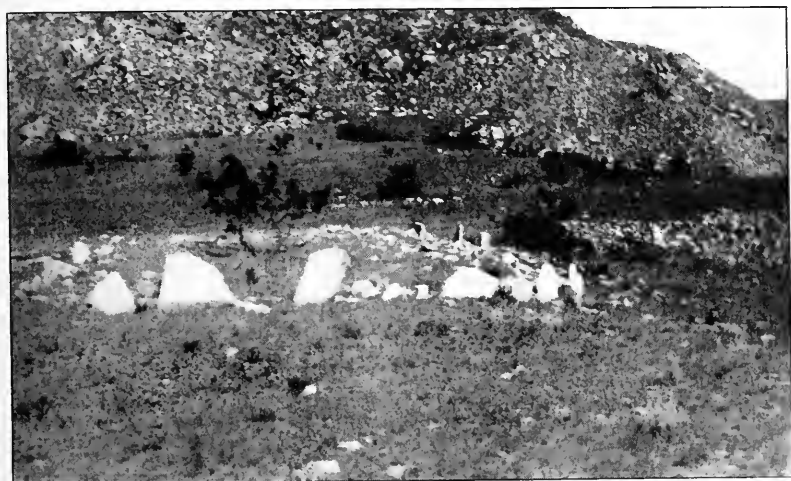


FIG. 5.—A large ruin on the second terrace, Antelope creek.

forty buildings. On Antelope creek, ruins are scattered through three miles of mesa, second terrace, and lower terrace of the valley. All we could do was to photograph, measure, and excavate. We carried a crew of eight men, but did not have time to examine more than fifty or sixty graves, and we excavated in twenty or twenty-five buildings. The graves are somewhat like those in Tennessee. Many are lined with flat slabs, not a few have stones placed on edge enclosing a space two by one-half meters. At a slight distance they give the impression of white men's burials, yet they are strictly aboriginal.

Few regions in the Painted Desert present a more weird aspect than the Cottonwood, Antelope, Tarbox, Dixon, or Landergin sites.

(See fig. 5). There is little vegetation save cottonwoods in the valleys. The cañons are brightly colored by disintegrated rocks in red, brown, white, and blue shades. Most of the groups do not appear to have been visited by any one save the few cattlemen of the region.

From a little distance, the large flat stones, on edge, and spaced more or less regularly, give the impression of 'miniature Stonehenges'. It is estimated that two or three winters' work are necessary to make proper explorations. Summers are very hot and there is a scarcity of good water, hence winter is the best season for field operations.

The results of our labors will be set forth in a volume devoted to the archaeology of the Arkansas valley, to be published at some future time, and it is therefore a little premature to offer conclusions, yet the writer would present a few observations based on the work done.

Beginning in central Oklahoma, we note a change from the general culture of the Mississippi valley tribes. The grooved axe almost disappears, and a notched hand hatchet takes its place. The pottery of the middle Mississippi valley group begins to change, and little of it is found beyond Havana, Arkansas; and practically none occurs at Muskogee, Oklahoma.

In central Oklahoma, the small mano stone appears in large numbers, and the pestle of eastern form disappears; this is significant, it seems to the writer. There is no sudden change, although a gradual one, until we reach Jackson's ranch, seven miles down Wolf creek from Handley's ruins. Here we find the first stone buildings, rectangular in form, and the stones placed on edge instead of laid flat. This is characteristic of most of the ruins in the panhandle that the stones are placed on edge. Man has not yet learned to build a good wall for his house.

Several characteristics are common to all of these structures. They are not large, they are rudimentary, and to the writer's mind they mark the beginning of architecture in stone in the Southwest. The fact that buildings are very small but seven miles from the larger and more developed group on the Handley's ranch,

is not surprising. The large group mentioned was probably constructed a few generations later than the first ones. Or, the people may have first built small settlements such as we found on Turkey and other creeks. Omission is made, in this article, of several lesser sites. As the people increased in numbers and perfected construction, the larger groups, such as Cottonwood, Tarbox, Dixon, and Handley's, came into being by gradual and natural evolution. (See fig. 6).



FIG. 6.—Large stones forming part of the walls of a building on Tarbox creek.

It is suggested to other observers that the many scattered stones found throughout the region, and especially those which still lie in circles, were used to hold edges of skin tipis, there being little wood outside of the valleys. The region is noted for very severe high winds and heavy stones are needed to hold down tent edges. From use of stones to hold down the tipi or brush-covered lodge, to use of more stones, is a step the intelligent Indian soon took. Abundance of suitable rock in the cañons and draws afforded him material. Thin slabs, a meter or more in length, set on edge, and other slabs to form a second row, gave the natives a foundation on which might be laid a low adobe wall. Between the stones he filled in earth. We do not know the nature of the roof, whether

it was composed of cottonwood timbers on which was placed earth, or of skins. It is quite apparent that we should not class all these stone structures as erected by a tribe which later perfected the Pueblo style of architecture on mesas, in valleys or cliffs. This, for the reason that many of the stone circles are not house foundations, and also that certain of the ruins do not contain enough stone to represent substantial foundations. A bird's-eye view of the several hundred buildings visited by the expedition, would indicate that they mark the transition period from residence in skin-covered tipis to—

1. Small foundations with pole and skin coverings.
2. Thicker walls, probably adobe construction above.
3. Stones laid flat—rudimentary Pueblo-Cliff Dweller construction.

The Pueblo people did occasionally migrate and we have some historical references to certain of them building in western Kansas. However, it is suggested that these Canadian valley ruins are not pure Pueblo. Next to architecture, the dominant factor of Pueblo-Cliff Dweller culture is the high ceramic art these people developed. It is but two hundred miles from the Landergin ruins to Pecos Pueblo, where the art was high. The able researches of Dr. Kidder and Dr. Guthe have proved this. It is unthinkable that Indians would lose, or discard, their skill as potters in traveling that distance. There has been no true Pueblo-Cliff Dweller pottery found on any of the sites visited by our party. Therefore, one is led to believe that the Canadian valley culture developed as it proceeded westward, rather than that these sites are mere outposts of those well-known Pueblo people.

As to the age of these remains, nothing positive can be affirmed. The King and Handley ruins are built upon a previous village site where buffalo, bear, antelope, and other bones have been found, one-half to one meter below the foundations. This is not where an overflow from a stream has occurred, although it may be due to a gradual wash from the hillsides, one hundred and fifty to two hundred and fifty meters distant.

None of the stones used in the houses were dressed, and there

are several openings or doorways in most of the larger structures. The floors were ordinary clay, hard packed. No turquoise and no ocean shells were found in the rooms. The oldest Apache, Comanche, and Kiowa were assembled in council five times during March, 1920, on the reservation near Anadarko, Oklahoma, by the writer. Upwards of a hundred Indians were interviewed. The older men remembered hunting buffalo in the panhandle, and some of them were in the Adobe Walls fight of 1874. They all stated that they had ridden over many of these ruins, but knew nothing concerning the building of them; that the old men of those days also were ignorant; they occasionally camped on top of the bluff at Landergin's ranch, but their people did not build the stone circles there.

I regret that space does not permit presentation of illustrations of more of the buildings and the pottery. It is not Mississippi valley form; it is not Pueblo; it probably marks the transition. Finally, there is nothing found indicating Mexican origin or Pueblo influence. On the contrary, so far as the writer can observe, we have a tribe originally living in the buffalo country and of "Plains Culture" status which changed as it spread westward up the Canadian. They also built irrigation ditches farther up the streams from their villages. As they moved farther away from the buffalo country they continued to change and develop until they established themselves in permanent villages—were no longer nomads—and finally became the Pueblo-Cliff Dweller people.

ANDOVER, MASS.

NOTES ON SHELL IMPLEMENTS FROM FLORIDA

By CLARENCE B. MOORE

CONSIDERABLE has been written¹ about the interesting implements of shell, made from conchs (*Busycon*) and from "horse-conchs" (*Fasciolaria*), which are found throughout almost the entire state of Florida and sparsely in neighboring regions, but are preeminent as to numbers and quality of make in the midden sites of the aboriginal Key-dwellers along the southwestern Florida coast between Mound Key in Lee county and Lossman's Key in the county of Monroe, inclusive. (See map, fig. 7).

Farther south among the Keys, on the peninsula, and among the beautiful islands below it, these midden sites do not extend, doubtless owing to the scarcity in their waters of the oyster, the principal article of diet among the eaters of shell-fish along the coast.

This season (1920) was spent by us along the southwestern Florida coast among many aboriginal sites, most of which were familiar to us. Among these was Sandfly, formerly described by us as Wiggins Key, on Sandfly Pass, near Chokoloskee. At Sandfly we found a change of ownership² and name and that a considerable amount of territory had been cleared since our latest visit in 1904, all of it a midden site covered with shells left from aboriginal times.

¹ Charles Rau, *Smithsonian Contributions to Knowledge* 287, "The Archaeological Collection of the United States National Museum," p. 66, *et seq.*, fig. 257.

Frank Hamilton Cushing, "A Preliminary Report on the Exploration of Ancient Key-Dweller Remains on the Gulf Coast of Florida," *Proceedings of the American Philosophical Society*, vol. xxxv, no. 153, p. 38 *et seq.*

C. B. Moore, *Journal of the Academy of Natural Sciences*, Phila.: "Antiquities of the Florida West-Coast," vol. xi, p. 380 *et seq.*; "Miscellaneous Investigation in Florida," vol. xiii, p. 315 *et seq.*; "Notes on the Ten Thousand Islands, Florida," vol. xiii, p. 463 *et seq.*

C. B. Moore, "Notes on the Archaeology of Florida," *American Anthropologist*, vol. xxi, no. 4, Oct.-Dec., 1919, p. 401 *et seq.*

² Mr. C. T. Boggess, the present owner, kindly placed the entire property at our disposal for repeated search.

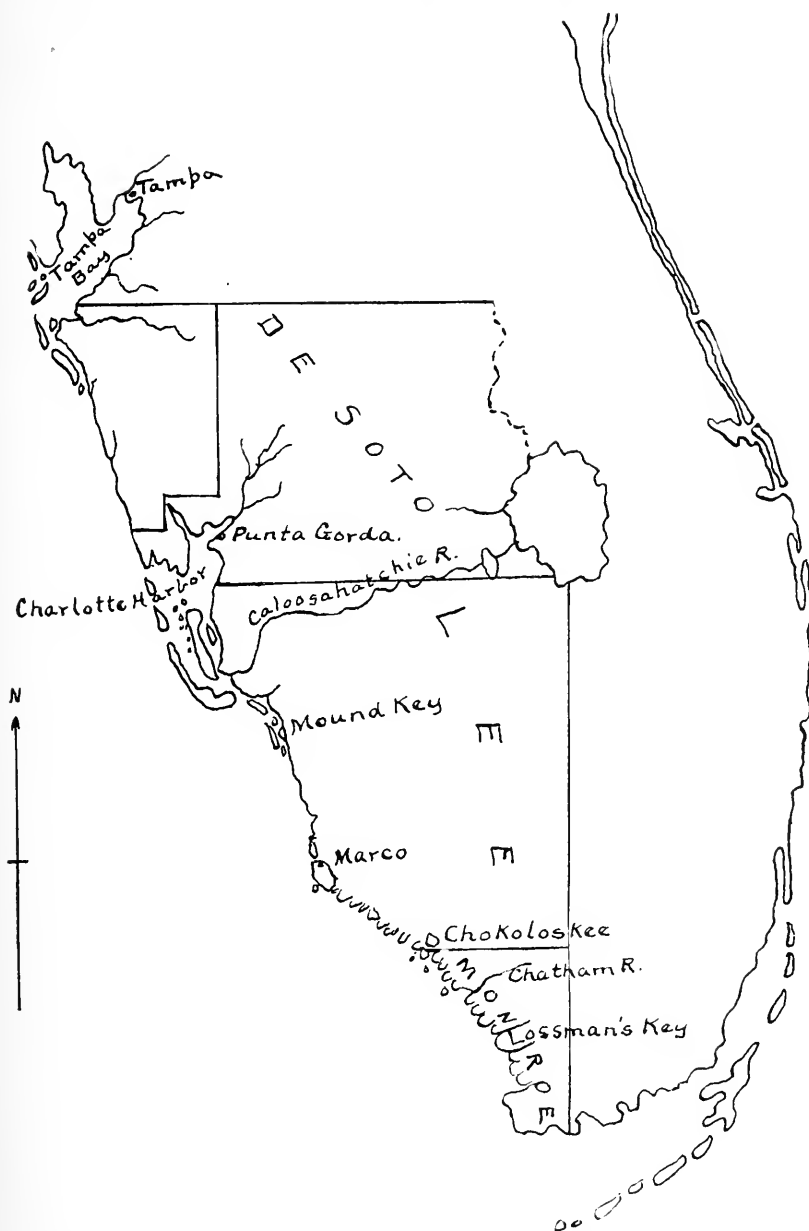


FIG. 7.—Outline map of the southwestern coast of the Florida peninsula.

Here, on one extensive field almost exclusively covered with oyster shells, we found only two or three shell implements. These were of the ordinary type met with along the southwestern Florida coast, where almost the entire shell is used and has holes, or a hole and a notch, in the body whorl, somewhat below the shoulder, permitting the handle to enter the shell almost at right angles.

In another great field, however, abounding with implements, practically all the shell tools made from the conch (*Busycon*) proved to be variants and had either one or two large holes in the top of the shell above the shoulder, and none intended for handles below it.¹

About a score of these shell tools from Sandfly, variants so far as the southwestern Florida coast is concerned, were sent to Mr. Charles C. Willoughby who very kindly has written as to the method of their hafting, and has presented to us three specimens hafted by him as shown in the illustrations, two from Sandfly and one from near the eastern coast of Florida.

The shell implements you sent for examination fall naturally into two groups—those with a single hafting perforation, and those with double perforations for hafting. All of these holes, whether single or double, are in the outer whorl of the spiral body above the shoulder. A few other minor perforations or fractures occur in the body of some of the shells, either above or below the shoulder. Judging by the weathering of their edges, some are as old as the hafting perforations, and as you suggest, may have been made to free the fish from the shell. Others are clearly of later date, for their edges show less weathering and some of the holes and fractures are relatively recent. I do not think that any of these smaller perforations had anything to do with the hafting of the implements, but that all of the twenty-two shells sent fall within one of the two above-mentioned groups.

I find practically no evidences of wear caused by the haft in any of the implements. Some of the hafting perforations are quite symmetrical with smooth edges, others are more roughly fashioned. The smoother edges, however, seem to be the result of superior workmanship rather than of wear.

It will be noticed that nearly all of the smaller implements come within the first group, and have but one perforation for the handle, while in the second group two perforations are required to insure proper rigidity of the heavier tool. The method of hafting, illustrated in fig. 8, answers well enough for the smaller tool, as the

¹ To show how nearly universal was this rule we may say that besides many imperfect shell tools of this class, some having one hole in the top and some two holes, we got from this field, entire or almost so, twenty implements each having two holes above the shoulder, and fourteen having one hole so placed. But two exceptions were found, each having a single hole below the shoulder and none elsewhere.

upper portion of the spire prevents the looped end of the haft from working loose in the ordinary light work such as the implement would naturally be used for.

The looped end of the handle of the heavier shell, however, (fig. 9), would soon become loosened by the additional strain and turn upward over the shell's apex, were it not held securely by the binding which passes through the second perforation. Most of the implements have picklike narrow cutting edges. Some of the larger ones, however, have adze-like edges. All were ground while

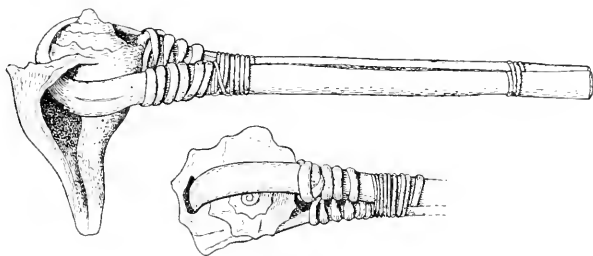


FIG. 8.—Method of hafting. About one-quarter size.

holding the aperture of the shell downward towards the abrading surface of the limestone, or other substance used for the purpose. The ground surface near the beak of the shell is therefore on about the same plane as the aperture. When the implement is being hafted, the handle can be adjusted so as to bring the cutting edge approximately parallel to it, or at right-angles, or into almost any position desired.

With the Indian's proficiency in such work, it would not take him long to select a shell of the proper size from which the fish had been previously extracted, grind

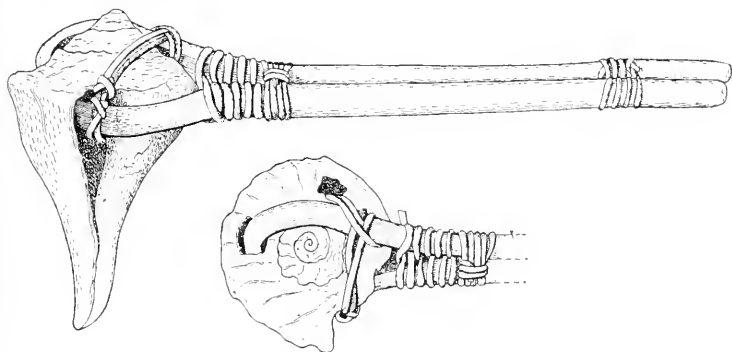


FIG. 9.—Method of hafting. About one-quarter size.

its beak to an edge, perforate the body whorl, and insert a haft. With a single blow of such a tool the body shell of a live *Busycon* could be quickly perforated to facilitate the removal of the fish, and I am inclined to think that many of the smaller tools of this type were often used for this purpose.

There is, of course, nothing new in the use of the looped handle such as I have

illustrated, except in its application to shell tools of this type for it was often employed by the Indians in hafting stone axes, mauls and clubs.

And now to take up another point in relation to tools of shell. Many of these implements have holes for the handle so carefully rounded that one is uncertain how they were made. A solution can now be offered as to some of them at least.

At Dismal Key we found a partly completed tool, evidently discarded on account of a crack accidentally developed in the making. The body whorl of the shell had been cut back about four inches from the aperture; part of the beak had been broken off to leave an end sufficiently thick to bevel into a cutting edge. The interesting point about the shell, however, is that in the place where a hole for a handle would be expected there is a round semi-perforation plainly made by pecking as shown in plate I. The margin of the hole later probably would have been ground into a regular surface.

On the top of this shell, above the shoulder, a small, irregular hole has been knocked through and this brings us to another question which, though discussed before,¹ may as well be brought to date.

We know that some of the natives around Key West, Florida, at the present time eat the conch (*Busycon*) and that, in order to aid in freeing the shell fish from its shell, they are accustomed to make a hole in it. Also we are told² that the aborigines of the West Indies made a small hole near the top of the shell (here the queen conch, *Strombus gigas*, is referred to) to aid in loosening the fish, and that the modern negro conch fishers there also break into the shell for this purpose but in different ways so that on finding these shells an investigator can determine by what class of persons the contents have been removed.

On such of those southwestern Florida Keys, however, where conch shells (*Busycon perversum*)³ are found, often in great numbers, all brought there when their contents were used for food by the aborigines, while many of the shells have a small hole (in the top

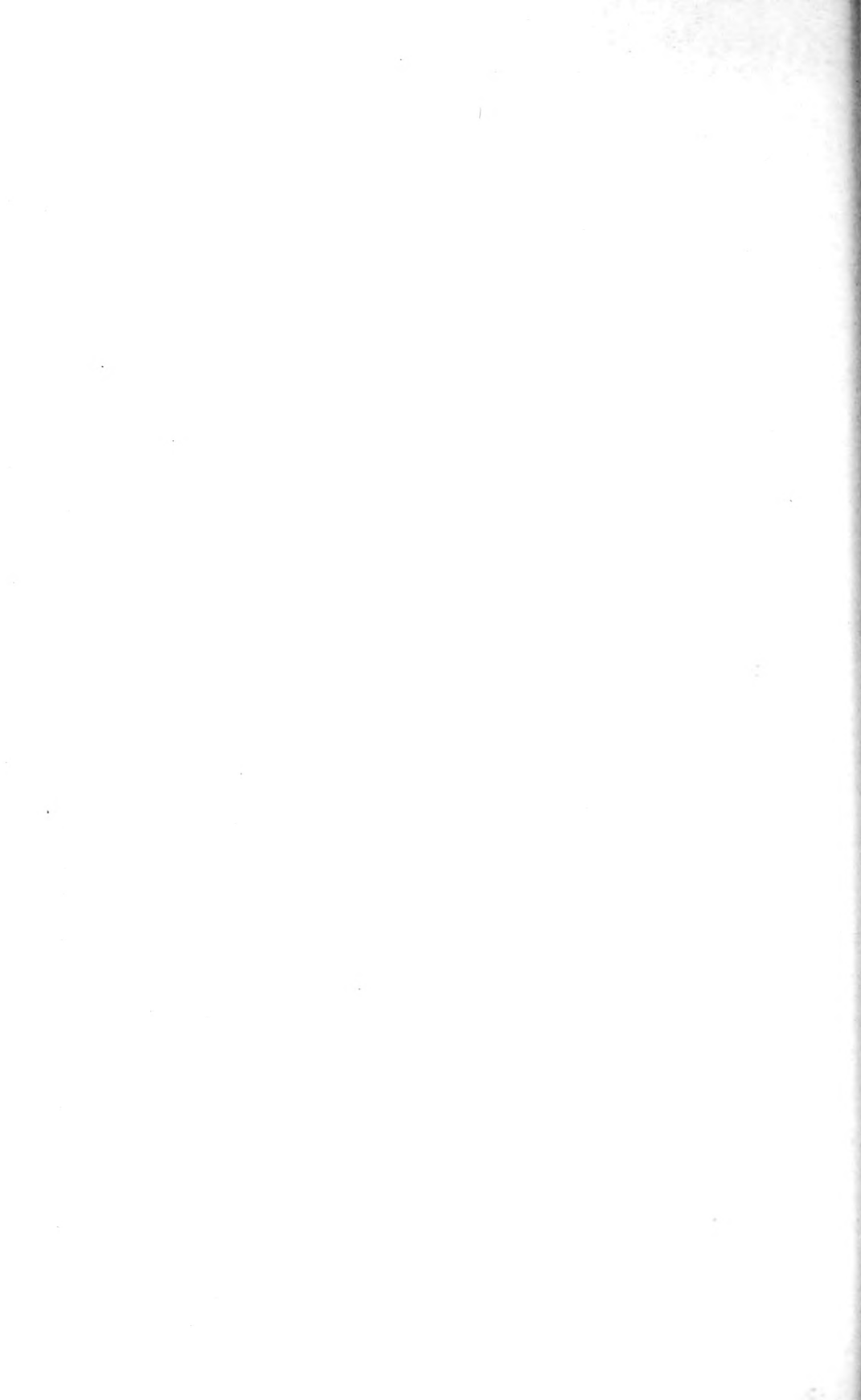
¹ *Notes on the Ten Thousand Islands*, p. 463 et seq.

² Theodoor De Booy, *Contributions from the Heye Museum*. Number 9, p. 79. Reprinted from the *American Anthropologist*, vol. XVII, no. 1, Jan.-March, 1915.

³ *Busycon carica*, having the opening to the right as one faces it, is not found on the western coast of Florida.



UNFINISHED TOOL OF SHELL SHOWING A METHOD OF MAKING THE HOLE FOR A HANDLE BY PECKING. (ACTUAL SIZE.)



as a rule), far greater numbers are without it. Therefore in this region we see that methods other than perforation of the shell often must have been practised to detach the fish.

We note also that these holes, which are small as a rule and of course are found in quantities of shells that have not been made into implements, on occasion served a secondary purpose when the shells were wrought into tools.

Cushing¹ in writing of his wonderful discoveries in the muck at Marco, a settlement at the northern end of Key Marco, tells us:

Thus the stick or handle could be driven into these perforations [the large holes for the handle] past the columella in such manner that it was sprung or clamped firmly into place. Nevertheless it was usually further secured with rawhide thongs—now mere jelly—passed through one or two additional perforations in the head, and around both the stick and the columella.

The present writer is fortunate in having received as a gift from Mr. Cushing a conch-shell implement from the Marco exploration (fig. 10) having part of the wooden handle and showing plainly deep furrows indicating the former presence of the thongs described by him. The reader will see that probably starting from what is now a deep, central depression, evidently the location of a knot, a thong was carried to the reader's left, wound around the handle, brought back (as shown by the double groove), carried to the opening at the right where it was again looped around the handle, was led upward over the shoulder, part way not in contact with the shell, to the small opening above the shoulder, through which it was drawn around the handle inside the shell and then, returning through the same opening, was directed down over the shoulder to the starting point where the marked depression is apparent, and was there knotted to the other end and to the cross thong below.

On all the hundreds, or probably thousands, of shell implements, dry surface finds, with one exception, that we have examined, no such furrows were apparent and we believe the marks on the shell in question were created by corrosive action in connection with the decomposition of the thongs, the acid affecting the lime of the

¹ *Op. cit.*, p. 40.

shell lying in the wet muck, and were not the result of wear. The large tool found by us in the muck of the canal on Mound Key¹

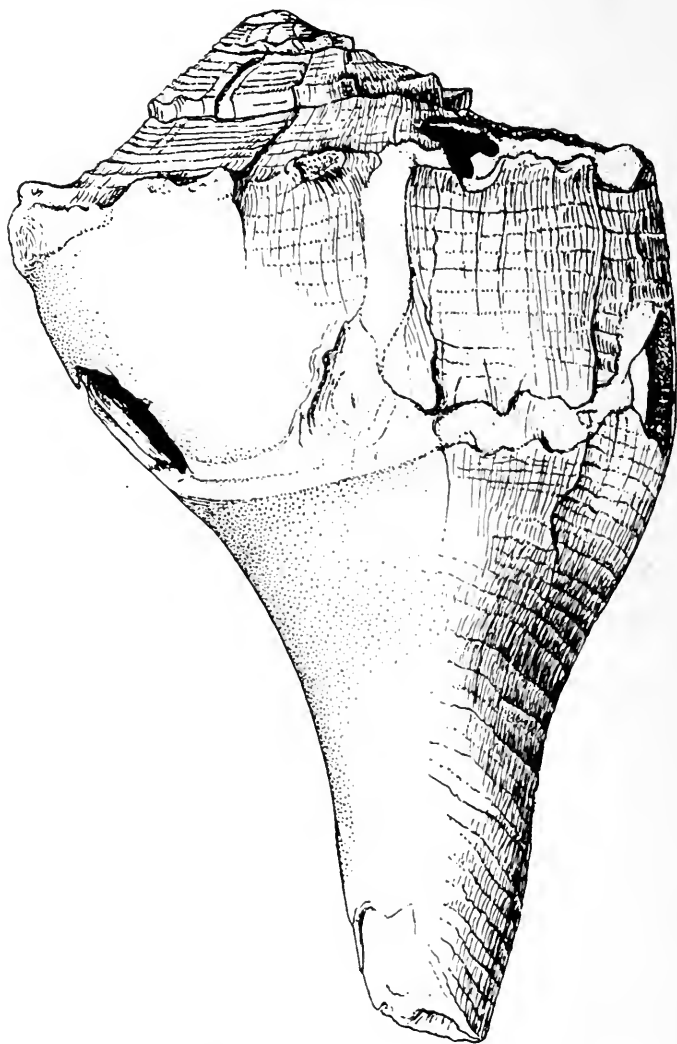


FIG. 10.—Shell tool from Marco, showing marks of thongs. Actual size.

perhaps had been dropped there without a handle and the accompanying thongs.

PHILADELPHIA, PA.

¹ *Certain Antiquities of the Florida West-Coast*, p. 388.

WORDS FOR TOBACCO IN AMERICAN INDIAN LANGUAGES¹

BY ROLAND B. DIXON

OF all the features of aboriginal American culture, the use of tobacco has long been regarded as one of the most characteristic. The idea of questioning its native character and antiquity could, in virtue of the mass of evidence indicating its use in very early times, hardly occur to anyone at all familiar with the results of American archaeology during the last generation. Professor Wiener, however, in a recent volume² has, in characteristically iconoclastic fashion, challenged this general conviction, and seeks to show, primarily on linguistic grounds, that not only are the words for tobacco over a large portion of the New World of West African Negro origin and ultimately derived from Arabic, but that the tobacco plant itself and the custom of smoking were unknown here until they were introduced, primarily by the Negro slaves brought over by the Portuguese and Spaniards, in the early part of the sixteenth century. Any question of the use of tobacco in America in pre-Columbian times is of course answered sufficiently and conclusively by the archaeological data and no amount of evidence that certain *words* for tobacco were of African origin could avail to prove the foreign introduction of the *plant*, in the face of the occurrence let us say of pipes or cigarettes in basket-maker or cliff-dweller sites, or of pipes in strata of typical Toltec culture in the Valley of Mexico. While therefore,

¹ In spelling the many native words I have usually transliterated antiquated forms, where necessary, according to more modern usage. In a few cases, however, where the original forms are not open to misinterpretation, I have left the older spelling, but enclosed the forms in parentheses. I have not burdened the pages with the voluminous footnotes necessary to refer in every case to the sources from which the various words have been taken, since these are for the most part well known to linguistic students. In a few cases where it seemed desirable, full references have been given.

² *Africa and the Discovery of America*, vol. 1. Philadelphia, 1920.

Professor Wiener's theory of the African origin of the plant itself and the custom of smoking, is manifestly quite indefensible, it is perhaps worth while to examine critically the evidence which he presents for the foreign origin of certain tobacco words. It will, I believe, be shown, that not only is there little or no foundation for the belief that American Indian words for tobacco are derived from Negro or European sources, but that the author of the theory could hardly have arrived at his conclusions, if his investigation of the whole question had been less superficial and more sound in method. Incidentally, this survey of the various words in use throughout the New World for a single object, brings out a number of interesting details as to possible culture contacts between rather widely separated tribes, and raises a number of rather puzzling questions.

Discussion of the data may be prefaced by a few words as to general principles. Native names for native products may in general be expected to be confined to languages of a particular linguistic stock, and each stock may thus be supposed to have its individual stem or stems which will not appear in unrelated languages except in rare cases and then only where influence or contact exists or has existed. An introduced name for a foreign product on the other hand may be expected to show a distribution which is quite regardless of linguistic frontiers. Moreover, words of native origin in most cases may be expected on analysis, to show some relationship to stems of general meaning in the language; foreign words on the other hand, would either show no related stems, or only such as would naturally be derived from the exotic stem, and not of fundamental or general character. Similarities between words in unrelated languages naturally suggest borrowing, but this can not be regarded as proven, until analysis of the words has shown that they are not, after all, derived from quite different stems, and that the resemblance is thus only fortuitous.

Knowledge, however, of perhaps the majority of American Indian languages is still far too imperfect to enable us to do much in the way of analysis, and no one student can hope to be competent in this respect for all even of the languages for which we possess

reasonably detailed knowledge. In what follows, therefore, I have merely tried to gather together and present the data, calling attention to such superficial, resemblances as seemed possibly significant, and only here and there attempting anything in the way of analysis.

Beginning the consideration of tobacco words with those of North America, it may be noted that the various linguistic stocks fall rather easily into two groups, (1) those which, with a wide area of distribution, employ two or more different stems, and (2) those, in general of more limited extent, which have but a single stem. Taking this latter group first, it appears that the stocks which it comprises fall naturally into a number of geographic subdivisions.

The Southeastern group includes the Uchean and Timuquanan stocks, the word for tobacco in the former being *i*, in the latter *hini*. There is no certainty of any resemblance between these two forms, and the only suggestion of similarity with neighboring stocks is in the case of the Creek, *hitci*.

The Gulf group presents somewhat paradoxical results, since the Attacapan, Chitimachan, and Tunican stocks which have recently been united by Swanton show three quite different forms (Attacapa, *tsig*; Chitimacha, *net*; Tunica, *era*); whereas the Coahuiltecan, *a'h*, Karankawan, *ak-anum*, and Tonkawan, *baqa*, *ne-bax-kan*, seem to show considerable resemblance. On the other hand a second form, *naots*, given for Tonkawan, suggests possible relations with Chitimachan. With neighboring stocks there is a suggestion of relationship with the Caddoan, where the Wichita has *tahah*, and the Caddo, *yahah*.

The Southwestern group with Zuñi, *ana*; Keresan, *hami*; and Tanoan *ca*, *Le*, *tiōye* shows wide variability. The only form exhibiting similarities with other stocks is the Zuñi, which may be compared with Navajo-Apache, *na'o*, and possibly (?) with the Siouan stem, consonant + *ani*, or the Karankawan *ak-anum*.

The Pacific Coast group is more widely scattered, but it too shows several examples of similarities. Beginning in the south we have Yukian, *waimil*; Yakonan, *tcuursen*; Kalapuyan, *kainoL*; Chinook, *KainoL*; Wakashan, *Lauk*; Tsimshian, *wundâ*; Haida, *gul*, *kwil*;

Tlingit, *gan(tc)*. Similarities are in all cases, as will be noted, between adjacent or supposedly related stocks. With neighboring stocks the only similarity noted is that of the Wakashan with the Bella Coola and Salishan tribes of Vancouver island. As the interior Salishan tribes all have a different term, it is obvious that the resemblance is due to the coastal tribes borrowing the Wakashan form.

The Plateau group, finally, like the one just considered, shows but few cases of possible relationship between its members. We have: Klamath, *katcal*; Shahaptian, *toh*, *tuwah*; Waiilatpuan, *hunc*, *fiānp*; Kutenay, *yaket*. The chief similarities with other stocks are Shahaptian *tuwah* with Hokan forms such as Shasta, *owa*; Yuma, *ova*; Pomo, *kuwa*. A curious instance of probably accidental resemblance is that of the Waiilatpuan (Cayuse) *hunc*, with the Tlingit, *gan(tc)*.

The results of this comparison of the words used for tobacco by the smaller linguistic stocks, show that in general each stock has its own peculiar form, although in a few cases borrowing may have occurred between adjacent tribes. For none of the words in these stocks has Professor Wiener asserted an African source, and none show any resemblance to his three primary Negro forms, except possibly the Tunica.

Turning now to the larger and more widely distributed stocks, we may begin with the Algonkian. The languages of which we have adequate information, have been grouped in four divisions, the Blackfoot, Cheyenne, Arapaho, and Eastern-Central, of which the last comprises the great majority. The words for tobacco in all the languages of this last division except the Eastern section, are derived from a common stem *sēma* or *asāma*: thus we have Cree-Montagnais, *tcistemā*; Menomini, *nānimau*; Sauk, *seiman*, *sāmon*; Fox, *Asāmar^a*; Kickapoo, *nessāmon*; Shawnee, *θema*; Ojibwa, *assāma*; Potawatomi, *sēma*; Ottawa, *sema*; Algonquin, *semah*. The phonetic variations are in accord with known sound modifications (Cree-Montagnais *st*, Menomini *n*, Shawnee *θ* = general Central Algonkian *s*). It is difficult to see any grounds whatever for supposing this Central Algonkian stem to have

been derived from the Negro *taba*, *tama*, *tawa*, for as initial *t* is common in Algonkian languages, there is no reason to expect a modification of *tama* to *sēma*. Since, moreover, the Arawak, word for tobacco (originally of "Negro origin") which, it is claimed by Professor Wiener, was brought overland from the Gulf to the Iroquoian tribes of Ontario and the St. Lawrence was not *tama* but *yuli*, *yari* giving rise to *yen*;¹ and since on the basis of his theory, the Central Algonkian tribes must have obtained both plant and name from this same source, there seems to be no possible way in which his *tama* stem of African origin could have reached them. Until the author of the theory explains how this could have occurred there can be no reason for giving the suggestion of African origin any serious consideration.

The Eastern sub-division of the Central Algonkian languages, derive their words for tobacco from a different stem, viz., Micmac, *tamāwā*; Abnaki, *udaman*; Maliseet, *tumawé*; Passamaquoddy, *dumawai*; Natick, *wuttamaug*; Narragansett, *ottomaok*. From this same stem, *tamā*, *AtAmā*, the words for "pipe," and "to smoke" are also formed in these languages, and the words for "to smoke" in nearly all the rest of the Central Algonkian group. Professor Wiener might justly claim here, a virtual identity in sound between the Eastern Algonkian stem and his Negro *tama*—but, he has by his own statements denied himself the right to claim any relationship, since he states² that only the Brazilian *petun* forms were introduced by the French up the St. Lawrence, and explicitly declares that, in the region between this river and Florida, the words for tobacco "proceeded northwards from Virginia, where the oldest form of the word is an abbreviated Span. *tabaco* or Fr. *tabac*." This form *apooke* presents obviously no relation to the Micmac and other Eastern Algonkian words, so that again no evidence is presented for the foreign origin of the American stem.

The western languages of the Algonkian stock, differing as they do widely in vocabulary from those of the Central type, have, as might be expected, somewhat variant forms in their words for

¹ Wiener; *op. cit.*, p. 185.

² *Ibid.*, p. 191.

tobacco. The Blackfoot, *pistakan*, may conceivably be related to the Cree-Montagnais, *tcistemau*, and so ultimately derived from the general stem *sema*, *asāma*. The Arapaho, *sisawa*, and Gros Ventres, *seḡawa*, are also, possibly related as is (?) the Cheyenne, *tsinimo*. That these western languages have, however, points of close contact with eastern forms is shown by the resemblance between the Blackfoot stem *-tsissi*, to smoke, and the Brother-town, *ni-tsisimu*, tobacco. The languages of the Lenapé and southern Atlantic coast tribes offer further interesting variants. The Lenapé themselves seem to employ a stem *-cate*, *-tcate* (*kshatey*, *koshate*, *gutschartai*, *shaate*) which suggests the Cheyenne-Gros Ventres stem for pipe, *-tca*, *-tsa*, or might on the other hand be compared with the neighboring Tuscarora and Cherokee, *tcahu*. On the other hand the word used for tobacco by the Virginia tribes and their relatives (*uppowoc*, *uhpook*, *apooke*, *hooḡpau*) shows a stem from which these same tribes also derive their words for pipe (*uhpoocan*, *pawpekon*) and which is the basis furthermore for the words for pipe, not only in Lenapé (*hopoagan*) and Natick (*hopuonck*), but also in all the Central Algonkian languages, viz., Cree, *ospwagan*; Montagnais, *cpuagan*; Menomini, *ukpokan*; Sauk and Fox, *pwakan*; Kickapoo, *poakan*; Shawnee, *p'quaga*; Miami, *poakanoh*; Illinois, *poagan*; Ojibwa, *opwagan*; Algonquin, *opwagan*. That all of these are derived from *apooke* and that this is a mere apocopation of *tobacco* (in which Professor Wiener enigmatically says that the *t*- appears as the "pronominal suffix"!) is a theory which without further evidence is not worthy of consideration. The other suggestion,¹ that the Cree-Montagnais stem *pitu*, to smoke, is derived from the French, *petun* in turn from the Brazilian *petun*, while superficially more credible, is certainly open to some question. The general Central Algonkian stem for "to smoke" is, as has been pointed out, *AtAma*, *tama*, *AtAmā*; the Ojibwa and Algonquin, however, use a stem *sagas*-, while the Cree-Montagnais as stated above, have *pit* or *pitu*. The fact that the supposed loan word is found only in these two closely related languages which extend over a very large area, and is

¹ *Op. cit.*, p. 144.

unknown to the other Algonkian tribes of Canada who had at least an equal opportunity of borrowing the word, makes the suggested origin not a little doubtful.

The languages of the Muskogean stock make use of two different stems for their words for tobacco. All except the Muskogee have a stem *hak* or *ak*, viz., Hitchiti, *ak-tcomi*; Natchez, *hag(au)*; Alibamu, *hak-soma*; Choctaw, *hak-tcuma* from which the Muskogee form *hitci* seems to be quite different. With the words for tobacco in use by neighboring stocks, this general stem, *hak*, *ak*, seems to show no resemblance, although its similarity to the more remote Coahuiltecan, *a'h*; Karankawan, *ak-anum*, and Tonkawan, *ne-bax-kan* has already been pointed out. Professor Wiener in his search for evidences of borrowing of Negro words, found comfort in the Choctaw *hak-tcuma*, whose latter portion he identified as the stem for tobacco, and thought to be derived from the Mande *tama*, while the *hak*- he assumed to be the article.¹ In so doing he has "emptied out the baby with the bath," since what he thought to be the article is in reality the stem! That *hak*- was not the article a moment's reference to any Choctaw grammar would have shown, since the article follows and does not precede the noun.

Words for tobacco in the languages of the Siouan stock seem, in the majority of cases, to be derived from a common stem, of which the initial consonant is rather widely variable. Thus, Dakota, *tcañdi*; Assiniboin, *tcanti*; Kansas, *nahni*; Omaha, *nini*; Osage, *nanāhu*, *pahni*; Ponca, *nini*; Iowa, *nanye*; Oto, *rane*; Winnebago, *tanina*; Ofo, *itcani*; Biloxi, *yani*; Tutelo, *yehni*. The Kwapa, *tadmi* and Mandan, *manacé* (Cf. Mandan *manainiduc*, tree; *manape*, leaves; Dakota, *tcañde*, *tcañwapa*) may also be derived from the same stem. The Hidatsa-Crow languages make use of a different stem *ope*, which, curiously, seems to be that used by the Catawba, whose word for tobacco is *umpa*. This stem seems also to be related to the Dakota *uñpa*, to smoke. Whether or not there is any relation between this Siouan stem and the general Algonkian stem for pipe, *uṑoa* it is hard to say; the resemblance of the Catawba *umpa* and the Virginia Algonkian *uhpook*, *apooke*, etc.,

¹ *Op. cit.*, p. 140.

is rather striking. Among the terms which Professor Wiener claims are derived from African originals, through Carib and Arawak, is the Biloxi *yani*. As this is so clearly a normal variation of the general Siouan stem, there is not the slightest reason to seek for it a foreign origin.

The Caddoan languages appear to have two different stems. The more northerly tribes have, Arikara, *nakuckanu*; Pawnee, *nawiskaru*; while the more southerly have forms which seem quite unrelated, viz. Caddo, *yahah*; Wichita, *tahah* or *weko*. The resemblance of these latter forms to the neighboring Coahuiltecan, Karankawan, and Tonkawan has already been noted.

In the languages of the Salishan stock, all the interior dialects make use of a single stem, viz., Lillooet, *smanih*; Thomson River, *cemen'eq*; Shuswap, *smanq*; Okinagan, *sma'n'uq*; Flathead, *sman'hu*; Coeur d'Alene, *semelkh*; Columbia, *smanhu*; which is also the basis of the words in two of the coastal dialects, i.e., the Songish and Niskwalli, which have Clallam, *smanac*; Lummi, *smanuc*; Songish, *smanic*; Niskwalli, *smanac*. This wide-spread stem shows no apparent resemblance to forms in use in any adjacent stocks, but may perhaps (?) be compared with the Central Algonkian *sema*, *asäma*. The Blackfoot, however, who are actually in contact with the Eastern Salishan tribes did not use this stem, so that unless their form *pistakan* is a relatively recent term, it is difficult to see how the borrowing could have taken place. Although the great mass of the interior Salishan tribes have thus a common stem for tobacco, the coastal tribes, with the exceptions above noted, use other stems. The more northern tribes have adopted the Wakashan stem, Bella Coola, *La'uk*; Comox, *a'wak*; Cowichan, *ewauk*; while the Squamish and Nanaimo dialects appear to have an independent form, *spo'Len*. The two southern coast groups, the Chehalis and Tillamook also have words which, with one possible exception, seem to have no similarities with others either within or without the stock, viz., Chehalis, *stxlusoqua*, *kwlemihin*; Cowlitz, *kwalemutxlin*; Tillamook, *suxoötxlil*, *tsotxltxl*. It is possible that the Cowlitz form is related to the Nez Percé, *kelamut* pipe, itself apparently from "calumet" which is of European origin.

The words for tobacco in the Athapascan stock show a number of interesting features.¹ Beginning with the northern tribes we find one stem in use by the Kutchin tribes, viz., Loucheux, *tsetted*; Upper Yukon, *se'ei-i-ti-it*; as well as the Dog-rib, *tsetetti*; the Hares, *tse-etturi*; the Montagnais, *tseentlu*; the Slave, *set'u*, *tseltohi*; and Chipewyan, *ts'elt'ui*. In these the *-t'u* is probably the stem for "to suck." A second stem is found among the majority of the British Columbia tribes, viz., Sekané, *edeke*; Nahané, *dekkei*, *tseakh*; Carrier, *teka*, *tsabara*; Beaver, *aldegai*. Individual tribes in this northern group present still further variants: thus we have Kaiyukhotana, *tahkuna*; Tsetsaut (Ahtena), *k'a*; Sarsi, *'akacinna*; Chilcotin, *tsulu*. Of these the Chilcotin seems to be related to the Chipewyan-Slave type, while the Sarsi may be compared with the Sekané-Carrier type so far at least as its first portion is concerned; the *-tcinna* probably means "stem of a plant." This is curiously similar to the *tsinimo* of the Cheyenne. Possibly the *'aka-* of the Sarsi and the *teka* of the Carrier, Sekané, etc., may be comparable with the Tlingit *gan*.

The Pacific Coast group of Athapascan languages, show rather more uniformity among themselves. Tlatskanai, the northernmost, has *tōtcané* which appears to be unique, but the Umpqua *setxlio* and the Coquille, Tolowa *selyo* and Lassik *selyo* are practically identical and are analyzable into *set* + *yo*, of which the latter is the stem "to blow." The first portion *set-*, *set-* seems likely to be the same as the *ts'el-*, or *tset-* of the Chippewyan group, and if this suggestion is confirmed, we should have one single stem in use among tribes of this stock from the Mackenzie delta to California. Whether the Nongatl and Sinkyone *sin-yo* is also traceable to the same stem, is not clear. The Hupa and Kato forms, *mindeiltewe* and *lit-tanoñ* show no relationship at all to other forms and are probably the result of circumlocutions devised on account of the death of some person whose name involved the stem formerly used for tobacco.

The words for tobacco among the Southern Athapascans,

¹For much information in regard to Athapascan forms I am indebted to the kindness of Dr. P. E. Goddard.

Navaho, and Apache, *nat'o*; Jicarilla, *nat'odi*, are practically identical, and like the Chipewyan group in the north, are compounds of the verbal stem *-t'o* to suck. It is at least interesting, and perhaps significant, that the Zuñian word for tobacco is *ana*.

The apparent relationship of the Pacific Coast Athapaskan *sel-*, *set-* to the Chipewyan-Kutchin *ts'el-*, *tset-* would seem to make it probable that the knowledge of tobacco had already been acquired before their separation, and further, would suggest that the Pacific Coast group were associated more with the Plains-Mackenzie than with the Rocky Mountain group of Northern Athapascans. Moreover, the fact that the Kutchin tribes of the upper Yukon use the same stem as the Chipewyan, Dog-rib, etc., would indicate that the use of tobacco spread into the upper Yukon region from the eastward. Lastly, the fact that the Navaho and Apache have a different stem than any of the other branches of the stock (*i.e.*, the use of *na-*) might be taken as evidence that the separation of this southern group took place before the use of tobacco was known.

In the Iroquoian stock, the Five Nations and probably the Hurons made use of a common stem (*o*)*yengw*, (*o*)*yenkw*, viz., Mohawk, *oiengua*; Onondaga, *oienkwa*; Cayuga, *oyeangwa*; Seneca, *oyanqua*; Huron¹, *oyngoua*. The Huron forms given by Sagard (*testena*, *tistenda*, *ayentaque*) are obviously from other stems, and will be considered later. Whether the form (*quiecta*) given by Cartier as in use at Hochelaga is from the same stem is uncertain. Transliterated into phonetic spelling, Cartier's word would probably be something like *kiiyekta* (Cf. Iroquois, *ki-enkwa-thas*, *ki-yenkwa-t'as*, to put tobacco in one's pipe) in which the *-yek-* may be a dialectic form of *yenkw*. The southern Iroquoian tribes derived their words for tobacco from a wholly different stem, viz., Tuscarora, *tcarho*, *tcehra*; Cherokee, *tcarhu*, *tsalu*, which may perhaps be compared with the Onondaga, *watcrola* (*wachrola*), to smoke.

Professor Wiener in discussing the Iroquoian tobacco words seems to have gone astray in consequence of insufficient investigation of the facts. He states in the first place that Sagard's Huron forms for "tobacco," *ayentaque*, *testena*, *tistenda*, and *ayettaya*

¹ As given by Lahontan, Thwaites edit., II, p. 748.

"I smoke," are "all from the root *yen*"¹ from which he also derives the Onondaga and Mohawk forms (*oijenqua*, *oienkwa*, etc.). A little further investigation, however, would have shown that the stem for tobacco is probably not *yen* since this enters into the formation of a number of words of quite unrelated meaning, viz., Mohawk, *gaienrha*, (*oienguara*) smoke; *oiente*, (*gaienta*) word; *gaienseron* to decorticate; *gaienton* to strike; *gaienθon* to own a field; *gaienteron* to know, etc., etc. It seems probable that the stem for tobacco must end with a guttural. Turning now to the Huron words as given by Sagard, it is clear that the problem cannot be settled in such an off-hand manner as that employed by Professor Wiener. It is fairly obvious that *testena*, *tistenda* are not derived from either *yen* or *yenkw*. The form *ayentaque* like the Iroquois terms cannot well be from a simple stem *yen*, but rather from *yent*, *yenta*. This it may be observed, is the Iroquois stem for wood (*oiente*, *gaienta*) to which the Huron form, although rather variant (*ondata*, in composition *-inda-la*), seems related. The Huron word for "I smoke" is, moreover, probably not derived from this stem at all. Sagard gives a number of forms, viz., *ayettaya*, *agalaya* "I smoke"; *etaya* "give me something to smoke"; *ataya* N. "N. smokes"; *sateya* "smoke!" Obviously, these are not derived from any stem *yen* or *yent*. Chaumonot, whose knowledge of the Huron language was far better than Sagard's, gives *atayen* "to smoke"; *etayak* "I smoke"; *eyetaya* "I shall smoke"; *te yetayan'de* "I am not smoking." The stem involved in all of these forms is pretty clearly something like (*a*)*taya* or (*e*)*taya* which may not improbably be connected with (*a*)*teyen* to burn. From what has been said, it is clear that the theory of the derivation of the Iroquoian and Huron words for tobacco from a stem *yen* derived from the Negro through the Arawak *iouli*, *yari*, *yeury*, improbable as it is on other grounds, is also indefensible on the linguistic side.

The two recently advocated Californian stocks, the Penutian and Hokan, each of which combines a number of what had previously been regarded as separate stocks, show little uniformity in their words for tobacco. The Penutian has more separate stems than

¹ Wiener, *op. cit.*, p. 145.

the number of former stocks of which it is composed, viz., Maidu, *pan*; Wintun, *lol*, *bomit*; Miwok, *kaiyau*, *kasu*, *kahu*; Costanoan, *mat(er)*, *oya*, *sawan-s*; Yokuts, *sokon*, *tcani*, *baum*. Within the stock it seems reasonable to connect the Maidu *pan* with Yokuts *baum* especially since the Sierra dialects of the Miwok which lie between the two, have *paumma* for pipe. With this may also be placed the Southern Wintun *bomit*. The same stem, apparently, is found further afield, namely among the Shoshonean tribes lying to the eastward, where the Shoshone-Comanche and Mono-Paviotso have *pamo*, *pamu*. If the common origin of these forms is admitted, the question naturally arises as to whether the Shoshonean or Penutian tribes were originators of the stem, but this can hardly be answered with certainty as yet. Other comparisons which might be made are Costanoan, *oya*, with Yukian, *woyol*; Yokuts, *sokon*, with Chumashan, *co(x)* and Pomo, *sako*, *saxa*. The Miwok, *kasu*, *kahu* and Esselen, *k'aa*, is more doubtful, and the close similarity of Yokuts *tcani* and Dakota *tcañdi* is probably wholly fortuitous.

In the case of the Hokan stock there is more probability that the majority of the words for tobacco are formed from a common stem. Thus we have Karok, *-hera*; Chimariko, *uwwuh*; Shasta, *owa*; Achomawi, *op'*; Atsugewi, *ohpi*; Yana, *mohu*; Pomo (N., C., E. and N. E.) *saxa*, *saka*, *sako*; (S., S.W., S. E.) *kawa*, *tom-kowa*; Chumashan, *co(x)*; Salinan, *talam*; Esselen, *k'aa*; Yuman, *uba*, *ova*, *auwa*, *auba*, *omp*; Seri, *api*; Washo, *bankuc*. The Washo form suggests a connection with the Penutian-Shoshonean *baum*, *pamo* which, since the Washo are entirely surrounded by these tribes, would not be improbable.

In connection with the Californian words for tobacco, mention must be made of the term given by Fletcher as obtained on Drake's voyage in 1579, to which much importance is attached by Professor Wiener.¹ Fletcher states that the Indians brought as a gift, bags of an herb which they called *tabah* or *tobah*. This is declared by Professor Wiener to be evidence that tobacco and its name (derived in this instance from Span. *tabacco*) had been introduced by Spanish or Portuguese visitors prior to Drake's visit. The consensus

¹ *Op. cit.*, p. 141.

of opinion places the location of his stay at or in the vicinity of Drake's Bay, which lies squarely within Miwok (Penutian) territory. The dialect spoken in this vicinity has for tobacco the word *kaiyau* in which it would require a very lively imagination to see an origin from the Spanish *tabacco*. It may be noted, however, that the coastal Pomo (Hokan) dialect adjoining the Miwok to the north, has *kawa* for tobacco which might have been heard by Fletcher as *tabah*. If this is the source of his word, then either the place of Drake's stay must have been farther north than has been thought (and on account of the character of the coast this is in the highest degree unlikely) or the southern limit of Pomo speech must have moved northward considerably since the end of the sixteenth century, for which supposition there is little evidence. It is of course also possible, that the plant in question was not tobacco, although in view of Drake's statement that the Indians brought "tabacco" this is not likely. That tobacco and its name could have been introduced prior to Drake's visit is extremely improbable. Cabrillo was the first explorer of the Californian coast north of San Francisco. On his voyage in 1542 he neither landed nor had any contact with the Indians in this region, and no other explorer or visitor is known to have been in the region between this date and Drake's visit, so that introduction of the plant and its name would seem to be quite doubtful. Moreover, the fact that the two species of tobacco (*i.e.*, *Nicotiana Bigelovii* and *N. attenuata*) used by the Californian Indians were local and quite different from those in use in Mexico and the eastern United States would in itself be sufficient evidence for any botanist of the impossibility of Professor Wiener's claim.

With the Shoshonean languages, we come to the northernmost member of the now pretty generally recognized Uto-Aztecan stock which includes, besides the Shoshonean, the Piman and Nahuatl languages. The Shoshonean branch is far from employing a single stem for its words for tobacco. The Shoshone, Bannock, Mono-Paviotso, and Comanche all have a stem *pamo*, or *pamu*, whose similarity with Penutian forms has already been pointed out. The Ute-Chemehuevi words are derived from a stem *kwap*, *kwap* which appears to have no cognates anywhere. With the Southern

Californian dialects we come to what is apparently the general Uto-Aztecan stem *piva*, only the Kern River tribes differing in having a form *cokont* derived from the Yokuts *sokon*. The general Uto-Aztecan stem is found among the Hopi and throughout the Piman and northern Nahuatl languages as far as Durango, viz., Hopi, *piva*; Pima, *böv*; Papago, Opata, *viva-t*; Tarahumare, *wipa-*; Yaqui, *vivam*; Tepehuane, *vivai*, *virai*. In the Cora and Huichol further south this becomes *ya*.¹ In the Nahuatl itself the word for tobacco seems clearly to be *ye-ll*, the stem of which may well be related to the Cora-Huichol *ya*.

The evidence for this Nahuatl form, however, requires a brief discussion, since Professor Wiener has declared² that the word "had no special meaning" and was probably derived from the Negro through the Arawak *yuli*. As he states, Olmos seems to be the first to use the term *yetl* which he translates "sahumerio," i.e., perfume, incense. In Molina's dictionary the word itself does not appear except in the form *piciell* defined as "an herb like henbane, which is medicinal." Professor Wiener goes on to point out that Hernandez³ does not use the word *yetl* in the edition of 1615, but in that of 1651⁴ gives it as the equivalent of *piciell*, saying further that it is used in the making of cigarettes. So far Professor Wiener is on safe ground, but makes an unpardonable error when he states that *yetl* is a "back formation from *piciell*" which is itself "an un-Mexican formation, for *pic-* does not occur in any other word whatsoever."⁵ As a matter of fact there are four other words which immediately follow *piciell* in Molina's dictionary which contain the stem *pic-*, viz., *piciliui* to become small (not "to crush, to triturate" as Professor Wiener gives it); *picilloa* to waste or diminish; *picillit* small, as of objects like pebbles or pearls; *picqui* a compact, solid thing. Other examples of the use of the

¹ Sapir: *American Anthropologist* (N.S.), XVII, p. 110.

² *Op. cit.*, pp. 150, 155.

³ F. Hernandez: *Cuatro Libros de la naturaliza y virtudes medicinales de las plantas y animales de la Nueva España*. Morelia, 1888, p. 136.

⁴ *Nova plantarum, animalium et mineralium mexicanorum historia*. Romae, 1651, pp. 173 sq.

⁵ Wiener: *op. cit.*, p. 150.

same stem are the reduplicated forms *pipica* to drop a liquid drop by drop; *pipiciltic* a small seed or similar object and also *picicilli* a species of small bird. In saying, therefore, that *pic-* "does not occur in any other word whatsoever" except *picietl* Professor Wiener is guilty of an extremely careless misstatement and misrepresentation of the facts. It is fairly obvious that *pic-* is a stem connoting the general idea of "smallness," and that therefore we are led to suppose that *pic-i-etl* (*pic-yetl*) probably means "small or dwarf *yetl*." If we turn to Hernandez this supposition is immediately confirmed, for on the same page to which Professor Wiener refers, it is expressly stated that there are two varieties of the plant, one called *picietl*, the other *quauhiyetl* of which the former or ordinary variety is a small plant "two palms in height," whereas the latter (whose name means tree-*yetl*) is much larger, growing as tall as a lemon tree. This demonstrates very clearly the existence of *yetl* as an independent word, and that it can be nothing else than tobacco is shown by Hernandez's explicit statement that the small variety is the same plant which is called *tauacco* in Santo Domingo, and that it is used with other aromatic substances in the making of cigarettes. Further confirmation of the existence of a word *yetl* may also be seen in the modern Mexican term *yellalcingo* (for *yella-tzin-co*) meaning "tobacco plantation."¹

For the little known and extinct languages of northeastern Mexico, no data are available, but from the four stocks in the great enclave in Nahuatl territory, material is at hand for three, viz., Otomi, *yiy*; Totonac (Tepehua) *llui*, *huxcuti*; Mayan (Huasteca) *mai*. Of these the only one which may be compared with forms in neighboring stocks is the Otomi, which is not very remote from the Nahuatl *ye-* and Cora-Huichol *ya*. From the Zapotecan stock we have forms from the Zapotec, *gessa* and Amuzgo, (*ts*)*o-kohnu*; from the Zoque we have *otsi*, *tsaivi* and Mixe, *huuk*, *hvik* none of which appear to show notable resemblance to terms in other languages. The Tequiztlatecan, which has recently been suggested as a remote outlier of the Hokan stock, has *ame*.

The Mayan stock, all of whose members except the Huasteca

¹ Robelo: *Diccionario de Aztequismos*, Cuernavaca, 1904, p. 415.

occupy a solid block from the Caribbean to the Pacific separating the languages of Mexico from those of Central America, has three different terms for tobacco. The Tzendal and Chicomulteca in Chiapas and the Kekchi and Pokomam in central and southern Guatemala use the form *mai* which is that in use, as already pointed out, by the Huasteca in Vera Cruz. The Chuje, Jacalteca, Mam, Aguacateca, Zutuhil, and Uspanteca occupying the area in Guatemala between the two *mai*-using groups, employ the stem *sic*. The Chontal, Maya, Chol, and Chorti who occupy all the northern portion of the stock area on the other hand have a stem *kutz*. On the basis of the tobacco words, therefore, the outlying Huasteca seem connected with the Chiapas and Guatemalan tribes rather than with those of Yucatan.

In the region of great linguistic diversity lying between Guatemala and Panama, data on words for tobacco are available for all the important languages except those of northern Honduras (Jicaquean and Payan) and the southern Nahua dialects. The terms found are as follows: Lencan, *wa, yahua*; Subtiaban, *rande*; Matagalpan, *wili, wilin*; Chiapanecan (Dirian) *nemurema*. Of these the Lencan and Matagalpan may well be compared with the Cunan *wala*. The Ulvan *aka* and Mosquito *twaka* are obviously connected, and the latter at once suggests an origin from *tobacco*, yet Brinton¹ gives a quite different word for the Mosquito, viz., *u* which would look rather toward the *wa, wala, wili* forms just noted. It is to be observed, moreover, that *Twaka, Taoca* is a well known name of one of the Mosquito tribes, and that the word also appears as the name of one of the rivers in their territory. The question therefore is one which requires further investigation before it can be regarded as settled.

With the first of the Chibchan tribes, we cross definitely the ethnographic boundary into South America. In treating the data from the southern continent, the material from the Pacific Coast languages will first be considered, followed by those of the Atlantic drainage.

The Chibchan stock is divided into an Isthmian and a con-

¹ Brinton: *Proc. Amer. Philos. Soc.*, XXXIV, p. 413.

tinental section by the Chocoan tribes who occupy the northwestern portion of Colombia. All of the Isthmian group (except possibly the Guaymi) form their words for tobacco from a stem *dua*, *tua*, viz., Guatuso, *tua*, *tuah*; Boruca, *dua*; Bribri, *deua*, *dawah*; Cabeçar, *duwa*; Terraba, Tirribi, *dua*, *dowo*; Dorasque, *dua*, *durni*. The Guaymi form is given as *so*, but this is probably the term for "to smoke," cf. Dorasque, *dua suluk*, "to smoke." Professor Wiener declares unhesitatingly that all these forms are derived from *tabacco* introduced by the Spanish and Negroes from Hispaniola. While such an origin is possible, yet in view of the existence of the neighboring forms like *wala* of the Cunan tribes, whose language is supposed to be a probable member of the Chibchan stock, the conclusion ought not to be jumped at that these *tua* forms are certainly from *tabacco*. The continental Chibchan languages present a complete divergence from the isthmian group and, moreover, do not agree among themselves. Thus we have Köggaba, *noai*; Chimila, *kööröka*; Paez, *mueihi*; Chibcha, *hoska*. If we accept the wider limits for the stock recently proposed by Rivet, we find for the Barbacoan, Cayapa, *tago*; Colorado, *taako* forms which more certainly look as if they were derived from *tabacco*. The coastal districts of Colombia and Ecuador might *a priori*, be regarded as the one area in the New World outside the northern and southern extremities, where tobacco would be least likely to have been in use in pre-Columbian times, so that a term of introduced origin might perhaps be expected here. The word found here preserves, as does the less certain Mosquitoan *twaka* and the Eskimo forms, the guttural sound present in the original, a fact certainly in favor of its origin from *tabacco*. Further evidence on this point will be referred to later, but as bearing on the whole question it may be noted that the Chocoan tribes who occupied the whole of the northern Pacific coast of Colombia, have a term for tobacco *ade* which seems quite unrelated to neighboring forms and is not open to the suspicion of an origin from *tabacco*, while the same thing is also true of the Esmeraldan stock on the southern Ecuadorian coast, who have the term *kanca*.

Whatever may be the ultimate decision as to the precise relation-

ship between Quechua and Aymara, these two languages of the old Inca state both employ the same word for tobacco, viz. *sairi*. There is considerable evidence of a wide dispersion of this term or rather of what may be its essential stem, in the area east of the Andes, but these instances of possible transmission can more conveniently be considered in treating of the languages of the Atlantic drainage. Professor Wiener, in seeking African origins for American tobacco names, derives the Quechua-Aymara *sairi* from the Negro *sira* meaning snuff,¹ basing his argument on Herrera's reference to "a load of shipwrecked Negroes" who in the early sixteenth century "had landed in Peru, where they formed a settlement with the Indians." It is quite evident, however, that Professor Wiener has again been in too much haste to prove his theory, and has failed apparently, even to consult a map to note where on the coast of "Peru" these Negroes came ashore! Had he done so, he would have found that the Cojimies river (as it is now called) where the refugees were said to have landed is in northern Ecuador, in Barbacoan, i.e., Chibchan territory and quite out of contact with Quechua speech. His theory thus, turns out to be baseless, in so far as he is seeking a source for the term *sairi*. It may be noted, however, that the Cojimies river is approximately the southern boundary of the Barbacoan group of Chibchan languages, among which group the presence of a form *tago*, *taako* has already been noted. Possibly Herrera's Negro refugees are responsible thus for the introduction of the obviously tobacco-like term, having brought it with them from Hispaniola. This question remains, however, an amusing little puzzle.

The Araucanian term for tobacco presents a case of some little interest. The older forms of the word are given as *ptem*, *puthem*, *puthen*, while the modern form is given by Augusta² as *petrem*. Lenz³ and others have regarded the word as probably derived from the Guarani *pety*, and since Professor Wiener regards this latter as of Portuguese origin, he enthusiastically follows and adopts this

¹ *Op. cit.*, p. 186.

² F. J. de Augusta: *Gramatica Araucana*, Valdivia, 1903, p. 391.

³ R. Lenz: *Diccionario Etimologico de las voces chilenas derivadas de lenguas indigenas Americanas*. Santiago de Chile, 1904-10, p. 616.

view of the source of the Araucanian word.¹ Although it must be admitted that the similarity between the Araucanian and Guarani words is sufficiently striking to warrant the possibility of their relationship, yet there is not a little to be said on the other side. For it may be noted that there are in Araucanian several words beside that for tobacco which are formed from the same stem, (viz. *pt·en*, *puthen* to burn; *puthon* to perfume, fumigate, smoke; *puthocal* to make a smoke fire). Now while it would be possible for the word for tobacco to be derived from a stem from which come the ordinary words for "to burn," "to make a smoke fire," etc., it would be almost incredible that these latter words of wide and general meaning should have come into existence only, as Professor Wiener says, after the use of tobacco became known, particularly if this was a knowledge gained so late as the sixteenth century.

In speaking of this assumed late origin of the Araucanian term from the Portuguese through the Tupi-Guarani, Professor Wiener seeks to justify and account for its transmission by stating that "as Chile was a part of the Province of Rio de la Plata, the Guarani-Tupi word for "tobacco" and its derivatives naturally were transferred to the west." This statement is, apparently, quite unwarranted as Chile proper never was a portion either of the Viceroyalty of Rio de la Plata (which did not even come into existence until 1776 or nearly two centuries *after* Valdivia wrote his account of the Araucanian language); or of the earlier province which, organized in 1620, was separated from Chile proper by Tucuman and Cuyo. The theory of the late introduction of the Tupi-Guarani term through Spanish influences has obviously, little or nothing to be said in its favor, but this is not to deny that such transference might not have taken place long before the advent of Europeans; indeed the striking similarity of the words in the two languages would naturally lead to this inference. Yet in this connection, it must be observed that the two stocks were not in contact in historic times, being separated from each other by a wide extent of territory occupied by Calchaquian, Puelchean, Guycuruan and Charruan tribes. If transference had taken place

¹ Wiener: *op. cit.*, p. 185.

westward from the Guarani, one might expect to find traces of the fact in the words for tobacco used by these intervening tribes. Unfortunately we have data only from the Puelchean (?) and Guycuruan stocks. The word for tobacco among the former was *putroquin* of which the first portion would seem to be closely allied to the Araucanian especially if we consider the modern form *petrem*. The Guycuruan forms, *asareh*, *eserike*, etc., are obviously of quite different origin. The whole question is a rather involved one, and all that can be said with any certainty is, that any transmission which may have occurred was probably long anterior to the first appearance of Europeans in America.

The Tupi-Guarani is one of the most widely distributed stocks in South America and affords, with the Arawakan and Cariban languages, data of importance in the study of tobacco words. The Tupi-Guarani are divided into a number of more or less separate groups, from all of which except the Bolivian tribes we have material. The Guarani used a form which in phonetic rendering, would seem to have been approximately *petü*ⁿ, while the Tupi of the Brazilian coast (who were probably offshoots of the Guarani that had migrated northward) employed a closely similar word, *petema*, *pyty'ma* (phonetically more nearly *pütüma*) *petun*. Of the Central Brazilian group the majority appear to have used closely related forms, viz. Apiaka, *petema*, *penteu*; Cayova, *pytyhla*; Yuruna, *poutima*, *pouitima*; Kamayura, *petun*, *petüm*; Aueto, *pä*, *päh*, *bē*. The Maues and Mundurucu however have apparently quite different forms, viz. *sovo* and *hě*, *ěě*. The upper Amazon group and the tribes of the Guiana borders, again show close similarity to the original Guarani type, viz., Cocamas, *pitema*; Omaguas, *petema*, *pitihla*; Oyampi, *petum*, *petoun*; Emerillon, *petime*. On the whole, the many tribes of this stock show a striking degree of uniformity over a great area, ranging from southern Brazil to the Guianas and from the eastern slopes of the Andes to the Atlantic coast at Cape S. Roque. Except for the already discussed case of the Araucanian resemblance, the Tupi-Guarani stem shows no similarity to other languages, and seems with one or two insignificant exceptions, to be confined to members of the stock alone.

This typically Tupi-Guarani stem, Professor Wiener declares¹ to be of modern origin, being derived he says from the Portuguese *betume* a word meaning "any pasty substance" but transferred according to his theory to tobacco. For this transfer or for the use of *betume* to mean tobacco, no evidence whatever is given; until it is given, one may be pardoned for regarding the theory as utterly baseless. Yet, even if clear evidence of the use of the word by the Portuguese with this meaning were brought forward, it would be incumbent on the proponent of the theory of its being the source of the Tupi-Guarani stem, to show how this borrowed stem could have obtained the distribution which it has. That in its spread it should be so strictly selective as to be adopted only by Tupi-Guarani tribes, and should reach far distant and isolated tribes without appearing among their neighbors, is very hard to believe, and very clear proof for such a theory would be necessary for its acceptance. Until then, some valid evidence is presented in its favor, the suggestion that the Tupi-Guarani words for tobacco were all derived from the Portuguese *betume* must be considered as quite unproved.

The Cariban stock vies with the Tupi-Guarani in its wide distribution, and like the latter, is spread over one large, continuous area and numerous smaller, isolated ones. Among the tribes occupying the large, continuous area, (covering a large part of Venezuela, the Guianas and northern Brazil) the word for tobacco appears in two forms, viz.: Cumanagota, *tam*, *tamo*; Cariniaco, *tamoui*; Carib, *tamoh*; Galibi, *tamoui*; Roucouyenne, *tamoui*; Apalai, *tamoui*; Akawai, *tamui*; Pianacoto, *tamoui*; Arara, *tamoui*; and Tamanaca, *kauwai*; Arecuna, *kauwai*; Macusi, *kawai*; Maquiritari, *kauai*; Paravilhana, *kauwai*; Azumara, *kawi*; Purigoto, *kawaii*. The tribes belonging to this second group, form a solid mass in southern Venezuela and on the upper Rio Branco, and are more or less surrounded on the north and east by the first group. Turning to the more isolated Cariban languages, we find the Apiaka of the lower Tocantins using the form *tame*, *tawe*; of the Parnahyba tribes, the Palmella have a similar form *tama* although the Pimen-

¹ *Op. cit.*, p. 135.

teira word *tciaming* may be of different origin. Of the upper Shingu tribes, the Bakairi use the form *tawe*, *tarwi* while the Nahuqua have *teninya*. The eastern Colombian tribes used a form close to the general stem, viz., Carijona, *tamouinto*; Hianakoto-Umaua, *tame*; as did also the Carib tribes of the Lesser Antilles, *i-taman-le*.

There would appear to be little doubt but that all of these forms, with the exception of the Pimenteiro and Nahuqua, are derived from the same stem *tama* or *tawe* of which the latter, if Bakairi is established as the most archaic dialect, would be the original form. The affiliation of the *kauwai* forms with this presents some little difficulty since a shift of initial *t* to *k* seems hardly yet established in the Cariban languages.

Outside the Cariban stock, forms comparable to either the *tama* or *kauwai* stems seem not to occur, so that as in the case of the Tupi-Guarani their distribution is confined to the tribes belonging to the stock. Thus the same argument applies here, as in the Tupi-Guarani, namely that, in spite of an obvious similarity with the Negro *taba*, *tama*, *tawa* stems from which Professor Wiener would derive them,¹ the facts of distribution make such an origin well nigh impossible.

The tobacco words in use by the various Arawakan² tribes offer perhaps the most interesting and puzzling problems of any. Of very wide distribution, the main body of the stock extends in an irregular but practically continuous band from northern Bolivia to the Orinoco, while other isolated groups were found from the upper Paraguay to the west coast of Florida.

The majority of the tribes in the main Arawakan area use words for tobacco derived from one of two stems. The first stem is found in a compact, continuous area in the region of the upper Orinoco and Rio Negro in eastern Colombia and southern Venezuela, viz., Siusi, (*n*)*dzema*; Katapolitana, *dzema*; Karutana, *ndzema*; Caruzana, *zhema*; Cavere, (*scema*); Uarekina, *däma*; Guipunavi *dema*; Mandahuaca, *dehena*; Yavitero, *shama*, *dyäma*; Baniva,

¹ *Op. cit.*, p. 140.

² I am indebted to Dr. W. C. Farabee for information on variants from some Arawak as well as other S. American tribes.

djema; Piapoco, *tsema*; Maipure, *hema*; Tariana, *yäma*. To this group are probably related the forms in use by the Arawakan tribes of the interior of British Guiana, viz.: Wapisiana, *suma*; Atarois, *suma*, (*schama*); Taruma, *tuma*. The other stem, in contrast to the one just considered, is only found widely scattered, viz.: Yaulapiti (in the Upper Schingu region) *airi*; Pammari (on the Upper Purus) *hädyiri* (Cf. *odyi*, smoke); Piro (on the Ucayali) *iri*; Baniva (upper tributaries of the Rio Negro) *eri*, *äli*; Baré (ditto) *hari*, *ari*, *ali*; Goajiro (in the Goajiro Peninsula, Northern Colombia) *yüri*, *yüllü*; Arawak (Guiana coast) *yaari*, *yeury*, *yulli*; Arawak (Lesser Antilles) (*ioulli*).

Unlike the first stem, which seems to have no close analogues, these forms at once raise the question of possible extensive borrowing and transmission. It may be noted first, that the Arawakan tribe of the Anti or Campa (who were in the Apurimac and Urubamba valleys north of Cuzco, and close neighbors of the Piros as well as the Quechuas) used for tobacco a form given variously as *sairi*, *seri*, *tzeri*, *leri* of which all but the last are very evidently the regular Quechua word. The neighboring Piros had, as already noted, the form *iri*, and five small, supposedly independent stocks located in this same vicinity or near Arawakan tribes using this stem, had words for tobacco which show a rather striking similarity, viz., Chapacuran, *aiwi*, *ivi*, *eve*; Ypurinan, *awiri*; Salivan, *arre*; Uitotoan, *vera*; and (?) Chavantean *waari*, *wali*, *wani*. Too little has as yet been done in the way of comparative Arawakan studies to enable one to do more than suggest that there seems to be a possibility here, of the transmission of a single stem to unrelated tribes over very extensive areas, although further analysis may show the resemblances to be in large part misleading.

The Moxos form *sabare* (*sahua*) may (?) be allied to the *sema*, *suma* series; the adjacent Baures employ a different word *sini*, which seems to find analogies in the Yammamadi *sina*. The Paressi *azie* and Saraveka *atce* stand more by themselves, as does the word in the other Matto Grosso languages of the stock in this vicinity, viz., Mehinaku, *Kustenau*, *Waura*, *höka*. The Guanä form *tcahi* is almost identical with the neighboring Otuquian form *tcaha*.

The Arawakan languages are believed by Professor Wiener¹ to have borrowed their words for tobacco from the Malinke *dyamba* meaning tobacco, and the Mandingo *duli* meaning smoke; from the former he derives the *dzema*, *sema*, *yema* series, from the latter the *eri*, *yeury*, *iouli* series. The resemblances are, it must be said, not very striking, and it requires only slight further consideration to reveal serious difficulties. In the case of the *dzema*, *sema*, *yema* series although the fact of the limitation of the supposedly introduced form to tribes of the Arawakan stock is not, because of the smaller area and more compact character of the territory in which the stem occurs, as insuperable an obstacle as in several previous instances, it is nevertheless a serious difficulty. For it is not easy to see why or how the Negro *dyamba*, for whose existence in the Antilles no evidence is given, could have spread thence or been carried by "the Negroes and Indians of Hispaniola" to the tribes of the upper Orinoco and Rio Negro, over the heads of the whole series of coastal tribes, among whom, from the same source and by the same means, a wholly different stem is supposed to have been simultaneously introduced.

Similar difficulties are met with in the case of the words derived, according to the African theory, from the Mandingo *duli*. Transmission of the stem *yuli* along the Caribbean coast from the Antilles to the Goajiro peninsula might indeed occur, but how account for the break of some six or seven hundred miles between the area of this coastal distribution and the Rio Negro region where the first of the interior tribes using the stem is found; and for the similar gaps of 500 to 1000 miles which lie between the other isolated areas in which it occurs? The assumption that these words are derived from a foreign stem introduced into the Antilles at the time of the discovery, and spreading thence for thousands of miles, in such a way as to occur only in small isolated and widely separated areas, is on its face impossible. The observed facts of distribution can only be explained on the basis of the shattering and wide dispersion of a group of Arawakan tribes having this stem in common, and who carried it with them to their final scat-

¹ *Op. cit.*, p. 154-5.

tered seats. And just such a disruption and subsequent wide migration of the Arawakan stock is generally admitted to have taken place as the result of the northern movement of the Carib peoples. In the course of these movements, other tribes *might* perhaps have borrowed the Arawak word, and thus its seeming presence in the Salivan, Ypurinan, Chapacuran, and Chavantean stocks be accounted for.

The real problem, however, is that of the Quechua-Aymara *sairi*. If the series, already pointed out, be arranged schematically with reference to geographical position, we get the following:

Quechua-Aimara-Anti	
SAIRI	
Goajiro <i>yüri</i>	Arawak <i>yaari</i> , <i>yeury</i>
Salivan <i>arre</i>	
Uitoto <i>yera</i>	Pammari <i>hädyiri</i>
Piro <i>iri</i> —Ypurinan <i>awiri</i>	
	Chapacuran <i>aiwi</i> , <i>iwi</i>
	Yaulapiti <i>airi</i> —Chavantean <i>waari</i>

Perhaps it is only a curious coincidence that the *sairi* form adjoins the *yuri*, *iri*, *airi* series, and the resemblance in sound may be purely fortuitous. Yet the similarity is striking enough for a hypothesis to be defensible to the effect that *sairi* was originally derived from the Arawakan stem. Should this connection be admitted, however, it would be further and conclusive evidence of the impossibility of the Arawakan stem being of foreign origin and introduced as a result of European contact in the early sixteenth century. For as the word *sairi* was recorded as early as 1586 in Peru,¹ and as Garcillasso de la Vega probably gained his knowledge of the term before he left Peru shortly after the middle of the sixteenth century, there can be little doubt but that the word was in use in the Quechua language at least as early as 1550. Since, however, there was no effective Spanish penetration of the interior of Venezuela much before 1530 it would have been quite impossible for the supposed African forms to have accomplished the journey of several thousands of miles across the forests of the upper Amazon,

¹ Holguin: *Vocabulario de la Lengua general de todo el Peru llamada Quechua*. Lima, 1586.

in the decade or two before the appearance of the word *sairi* in Peru.

The remainder of the South American stocks may best be considered in two groups, (1) those of the Brazilian highlands and (2) the broad belt of small stocks lying just east of the Andes and extending from the Chaco region almost to the Caribbean.

The dominant factor in the first group is the Ges or Tapuyan stock which occupied the larger part of the whole area and appears to represent the oldest stratum of the aboriginal population. The languages in use by the tribes composing this group are pretty widely variant, and this is reflected in their words for tobacco. Some resemblances, however, may be seen. Thus we have Botocudo, *hinkum*, *gninnang*, etc.; Masacara, *hina*, *hingza*; Camacan, *hiah*; Apinages, *karenio*, *kariniako*; Cayapo, *karingu*, *kalinu*, *arena*; Aponegicren, *boraho*; Caraho, *paro*; Coroado, *boke*; Puris, *poke*. The forms in use by the Botocudo group may be compared with the neighboring Chavantean (Cherontes) *kwanyeu*, *waniyeu*; the Aponegicren-Caraho with the Caririan *poiuh*, *paewi*. The Acromirim *wari* seems to fall in with the Chavante *waari* in the Arawakan series. That there is any relation between the Arawakan Baures and Yammamadi *sini*, *sina* and the Masacara *hina* seems doubtful. The Tapuyan tribes were with few exceptions non-agricultural, nomadic tribes, and many were said not to have had tobacco when first known to Europeans. It is to be expected, therefore, that the terms for tobacco in use should show similarities to those of some of their more civilized neighbors.

The other stocks in this eastern Brazilian area appear to have had, for the most part, quite independent words for tobacco. Thus we find Trumai, *fi*; Goyatacan, *aptcign*; Bororoan, *mäh*; Carayan, *kuti*; Guatoan, (*ma*)*bo*. The last, and what is said to have been the "old word" among the Caraya, *biuwa*, may be connected with the Caririan *poiuh*, *paewi*. This may have been brought in by the Cariri from the west, since we find Apolistan *poi* for cigar. In view of the almost complete encirclement in historic times of the whole area of the Brazilian Highlands by tribes of the Tupi-Guarani stock, it is striking that there seems to be no trace among the Highland tribes of any *petun* forms.

In considering the patchwork of small stocks east of the Andes, we may most conveniently begin in the south and work northward toward the Caribbean. The Guycuruan stock of the Chaco at once affords a puzzle. The words here for tobacco are: *Mocovi, asareh, eserike*; *Toba, asiedeh, ecierok*. The striking resemblance of the *Mocovi* at least to the *Quechua-Aymara sairi* is at once apparent, and raises the question whether the Guycuruan languages can be added to the long list of those which appear to have derived their tobacco words from some common source. The stock was, in historic times, separated from the *Quechua-Aymara* by the territory of the *Calchaquian* tribes, of whose language we unfortunately know practically nothing. The closeness in form of the Guycuruan words to the *Quechua* and its location so far beyond any known *Arawakan* influence, suggest that perhaps the *Quechuan* form is the real source for both the Guycuruan and some of the other non-Arawakan terms, and that the two series of derivatives have accidentally met.

The *Yurucare*, *Mosatena*, and *Tacana* although long in close contact with the *Quechua-Aymara* and showing a considerable number of loan words from these languages in their own speech, give little suggestion of borrowing so far as regards their words for tobacco. These are in order, *kore, kos*, and *umasa, umaxa*, and all appear to be independent except for a possible (?) connection of the latter form with the *Panoan rumue*. The *Chapacuran* languages situated somewhat farther eastward, have *Chapacura, eve, ivi*; *Pawumwa, aiwi*; *Itenes, yove*, which, as already pointed out, may be connected with the *Arawakan iri, airi, yuri* series. The large *Panoan* stock shows at least two words for tobacco, *Conibo, rumue (dromba?)*; *Caripuna, rumoe*; *Sipibo, cika, tcika*. The *Conibo-Caripuna* form suggests the *Chibchan (Paez) mue-hi*, while the *Sipibo* word may be connected with the *Chibchan hoska*. Although at present the *Panoan* tribes are not in contact with the *Chibchan* stock, they are supposed to have formerly occupied territory much farther north, where contact would not have been impossible.

The *Jurian jiya* (phonetically *hiya?*) shows no notable resem-

blance to any neighboring forms, and this is also the case with the Mainan *pinterlo*, although the other word given from this stock, *ukhualék*, might suggest connection with the Zaparan *xwaneka*. The Uitotoan *yera*, *yära iera* would appear to belong, as previously stated, to the Arawakan *yuri*, *iri* series. Jivaran *tsalano*, *sango* and the wide-spread Betoyan form *meno* seem all to be independent. Some interest attaches to a small group of four supposedly independent stocks lying between the Rio Negro and the Orinoco. The words used for tobacco by them are as follows: Makuan, *hot*, *hE(b)*; Piaroan, *hate*, *hahetue*; Puinavian, *jeup*, *job* (phonetically *höp*, *hob*); Guahiban, *joo*, *ho*. With these possibly the Guaraunan forms *aha*, *aoha*, *akae* may also be compared. The similarity between these various tobacco words suggests that these stocks, now somewhat separated, may formerly have lived in close association, and have been scattered as a result of the Cariban invasion. The Otomacan *gui* (phonetically *wi*) seems to show no decided resemblance to other neighboring forms, which is also the case with the Yaruran *gambi*.

There remains to consider two special cases in which we know, or can be practically certain, that the introduction of tobacco dates from after the period of the discovery. The first is that of the Tsonekan or Tehuelche stock of Patagonia. Here the evidence, both historical and archaeological shows that tobacco was not in use prior to the period of Spanish contact. The word in use among these tribes is given variously as *hiatca* and *golkul*. Neither of these forms shows resemblance to the neighboring terms, the Guycuruan variant *outcete* and the Otuquian *tacha* being too remote to be of any probable significance.

The second case is that of the Alaskan Eskimo. Here, as we know from the form of the pipe, the knowledge and use of tobacco was introduced from the Chukchi of northeastern Siberia, who in their turn got tobacco and its name from the Russians. The word in use among all the Western Eskimo tribes is practically identical, viz., Kopagmiut, *tawarak*; Nuwukmiut, *tauwak*; Kotzebue Sound, *tauwak*; Malemiut, *tabak*; Ugalakmiut, *tawaku* and is obviously a close imitation of the Chukchi *tawax* (*tawar*, *taak*). The

Eskimo of Labrador, on the other hand, who probably secured tobacco first from the eastern Algonkian tribes, use a quite different form, *tupiving*. In the case of the western Eskimo thus, where we know the word to have been introduced, we have a very close approximation to the form tobacco, and no evidence of any greatly mutilated or modified forms as in the cases claimed in other areas by Professor Wiener.

The foregoing rapid survey and comparison of the words for tobacco in the majority of American Indian languages seems to establish the following results. Speaking in general there are approximately as many distinct stems for the word "tobacco" as there are separate linguistic stocks, and as a rule each stock has its own characteristic stem or stems. In some cases the same stem appears to be in use by two or more different stocks, but this is on the whole a rare phenomenon. Only one case has been found in which a single stem seems to have a wide distribution among unrelated languages, that of *sairi*, for which, however, no extra-American source can be claimed. The situation is, in fact, just what would be expected if tobacco had been known and used by the American Indians for centuries or even thousands of years, and tobacco words seem to be quite on a par with other words relating to native plants and animals.

Where more than one stem is in use by a stock, it is probable that one form is really characteristic, while the other or others are borrowed from neighboring stocks by peripheral tribes; or the stems for "tobacco," "to smoke," or "pipe" are used alternately by different portions of the stock. Where similarities between the words for tobacco suggest borrowing, in almost every case the tribes concerned either now are or at one time may have been in contact.

The facts brought out tend very strongly to disprove, on purely linguistic grounds, the theory recently advanced by Professor Wiener, that tobacco and its use as well as many of the names for the plant, were of European and Negro introduction at the period of the discovery. The number and variety alone of the stems in use in the New World would negative such an hypothesis, in spite

of its author's nimbleness in deriving Indian forms now from one, now from another Negro word. The facts of the distribution of the supposed Negro forms, however, are such as to preclude the origin of the American forms from foreign stems, for the restriction of particular stems to particular stocks rather than their indiscriminate dissemination, and the existence of these typical stems in far distant and isolated tribes belonging to the stock, make any explanation, other than one based on expansion and migration of an originally united group of related tribes, practically impossible. Lastly, further evidence of the native origin of many of these tobacco words, is seen in the existence of other words in the language, formed from related stems, a condition which could hardly exist were the tobacco words of extraneous origin.

That similarities can be found between certain Negro languages and some in America is obvious. They may be found between any two languages in any part of the world. The Mande *tama*, *tawa*, *taba* unquestionably suggests the Micmac *tumawa* or the Cariban *tamo*; but in view of all the known facts it is as unjustifiable to declare these American words to be derived from the Mande, as it would be to claim that the Cherokee *tcahu* was the source of the Otuquian *tcahi*, *tcaha*; the Miwok *kasu* of the Mosatena *kos*; the Creek *hitci* of the Saravekan *hatce*; or that because the Maori of New Zealand call the sun *ra*, they must have borrowed the term from Egyptian!

As stated in the beginning, the fact that tobacco and its use was known in America, centuries before the earliest European contact is abundantly proved by archaeological data; that it was in use at the time of the discovery is shown by historical evidence. To have made the foregoing investigation of the words for tobacco, with a view to showing their native rather than foreign origin, has been consequently in part, a work of supererogation. It has, however, disclosed a number of interesting problems and suggested several unsuspected possibilities in the way of cultural influences. Our knowledge of the great majority of American Indian languages is as yet too incomplete to enable us to make trustworthy analyses of much of their vocabulary, and for many lan-

guages must always remain so. But with increasing knowledge it may sometime be possible to obtain by some such study as has here been tentatively made, real clues as to the sources and lines of transmission of many of the cultivated plants of the New World.

HARVARD UNIVERSITY

NOTES ON THE STONE AGE PEOPLE OF JAPAN

By H. MATSUMOTO

I. INTRODUCTION

PALEANTHROPOLOGICAL and archaeological studies in Japan have made great advances in the last few years, owing to our successive discoveries of sites yielding many good human skeletons. Unfortunately, the majority of the reports of many Japanese authors were written in Japanese, so that they are generally not available to the authorities of foreign countries. I have been asked, first by Prof. M. Courant and now again by Prof. W. K. Gregory, concerning this subject. I am, at present, a visitor in America and have no Japanese books or papers of reference at hand, so it is impossible for me to make up a precise report with accurate statistical tables. It should be remembered that these notes have been written only from memory.

II. MORE IMPORTANT STONE AGE SITES YIELDING HUMAN SKELETONS

1. *Kitchen-midden of Aoshima*, Tome district, Province of Rikuzen, northeastern part of the main island. This site, discovered by me, consists of two shell-bearing beds; the upper one is rather poor in shell fragments, but the lower one very rich in this material. The shells are mostly from fresh water and only partly marine. I once obtained fourteen human skeletons from the upper bed of this site, and I am going to proceed with further researches after my return home. The stone implements and pottery of this site are of the type of the earlier stone age of Japan.

2. *Kitchen-midden of Miyato island*, one of the islands of Matsushima, also Province of Rikuzen. The presence of human skeletons at this site was discovered by me and my coöperator, Dr. I. Hayasaka of our institute. This site now belongs to our institute as a ground for our study. It consists of about eighteen

shell-bearing beds and ranges vertically more than twenty feet. I have obtained many good human skeletons from this site, and it is certain that it contains many skeletons as yet untouched. The stone implements and pottery of this site are of the type of the mediaeval stone age of Japan.

3. *Kitchen-midden of Tsukumo*, Asaguchi district, Province of Bitchû, western part of the main island. The first discovery of human skeletons at this site was made by a landlord of this locality, Mr. S. Matsuyeda, by whom I was given a number of human skeletons. Since my preliminary short report of the human skeletons of this site, Profs. Hamada, Suzuki, Kyiono, Ôgushi, and Hasebe have undertaken the study of the same subject. This site is a shell-bearing bed of the mediaeval stone age of Japan, covered over by a layer of the earlier metal age. The bed yielding human skeletons is undoubtedly the former.

4. *Site of Kô*, Province of Kawachi, western middle part of the main island. The first discovery of human skeletons from this site was by Prof. Hamada. He, as well as Professors Ôgushi, Koganei, and Hasebe, are now studying on this site, which is not a shell-heap. The lower layer yields human skeletons, associated with stone implements and pottery of the latest mediaeval stone age, and the upper layer yields pottery of the earlier metal age.

5. *Kitchen-midden of the Cave of Ôsakai*, Himi district, Province of Kaga, northern coast of middle part of the main island. This site, discovered by Mr. J. Shibata, consists of six shell-bearing beds, the lowest bed of which is of the mediaeval stone age, the next two beds of the later stone age, and the upper three beds of the metal age. The second and the fourth beds from below yielded a small number of human skeletons.

6. *Kitchen-midden of Higashi-ataka*, near Kumamoto, Province of Higo, Kiushû. This site has yielded many human skeletons which are, at present, being studied by Prof. Yamazaki. The pottery of this site is said to be of the types of both the mediaeval and the later stone age of Japan. It is not yet clearly known which of the two types of pottery accompanied the human skeletons.

7. *Kitchen-midden of Todoroki*, near Kumamoto, Province of

Higo also. A part of the human skeletons found at this site has been reported upon by Prof. Suzuki, while another part is just being studied by Prof. Yamazaki. I am not informed concerning the pottery of this site, but it may possibly be of the type of either the mediaeval or the later stone age of Japan.

Several other sites known to yield human skeletons are not yet carefully excavated and thoroughly studied.

III. CHRONOLOGICAL SUBDIVISIONS OF THE STONE AGE OF JAPAN—DEGENERATIVE EVOLUTION OF THE DECORATIVE PATTERN OF POTTERY

All the stone age sites hitherto discovered in Japan belong to the neolithic age, or new stone age, in the European classification. Nevertheless, the divergencies observed to exist among several sites and among several types of remains are very great, suggesting that the stone age of Japan might have had a considerable duration.

Among the neolithic remains, the pottery is one of the most valuable horizon-indicators. Tracing the changes or evolution of the pottery from below upwards in any site, we can clearly recognize the direction of changes or evolution which have taken place in the stone age pottery. According to my own statistical studies of the pottery collected by careful, serial excavations, the following important changes have been proved occurring in the stone age pottery of Japan:

1. Richer in large bottomed pottery below, and richer in small bottomed pottery above.
2. Richer in thick pottery below, and richer in thin pottery above.
3. Richer in pottery with coarse and rough mat impression below, and richer in that with fine and nice mat impression above.
4. Richer in pottery with ornamental pattern of lower order below, and richer in that with ornamental pattern of higher order above. As to the ornamental pattern of the same order, richer in the more well-developed ornamental pattern below, and richer in the more upwardly retired ornamental pattern above.
5. Richer in reddish or brownish pottery in the earlier than in

the mediaeval stone age, and richer in very dark pottery in the mediaeval than in the earlier stone age; and again, richer in very dark pottery in the mediaeval than in the later stone age, and richer in reddish or yellowish pottery in the later than in the mediaeval stone age.

Now I have to discuss the orders of the decorative pattern of pottery. They are:

1. Bas-relief decorative pattern of curve and spiral design. This decorative pattern is observed in the earliest pottery of Japan. It consists of wide bas-relief ribbons of curve and spiral design

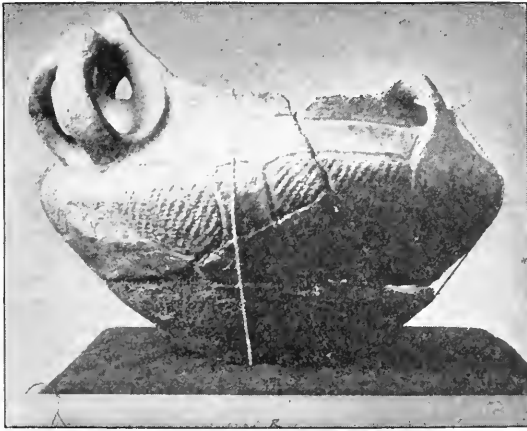


FIG. 11.—Type of pottery of the lower earlier stone age.

applied on the outer surface of pottery. A small number of very elaborate handles also of bas-relief and spiral design developed on the oral margin of pottery, as a part or parts of this decoration. This decoration usually coexisted with mat impression on the outer surface of the same pottery.

This decoration progressed upwards, toward the oral margin of pottery, uniting at last with the original oral edge so as to form a double edge. Hand in hand with the retirement of this decoration, the elaborate handles became smaller and simpler also.

2. Incised decorative pattern of curve and spiral design. This decorative pattern was of the second order, developing upwards,

just below the retiring bas-relief decoration of the first order. The decoration of this second order was sometimes bas-relief consisting of narrow ribbons especially in its earlier stage, but most commonly it was incised throughout. This decoration might sometimes stand alone by itself, but usually coexisted with mat impression on the outer surface.

This decoration reached its highest tide, when the decoration of the first order had just retired to the very margin of the mouth of pottery. At its highest tide, it occupied almost the whole outer

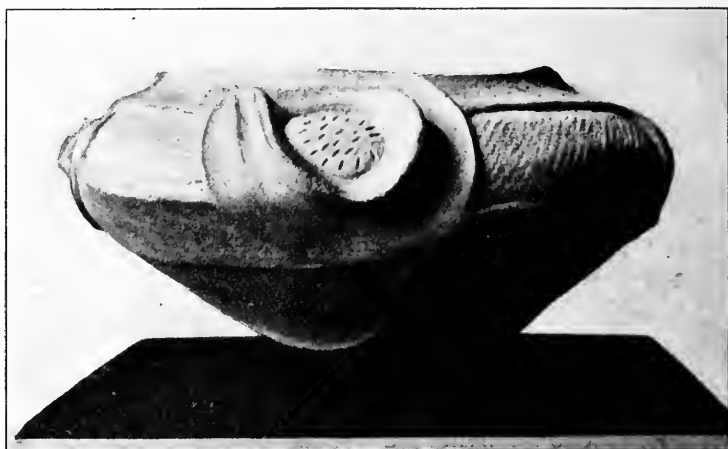


FIG. 12.—Type of pottery of the lower earlier stone age.

surface of the vessel or of the body of it, in the vessels without or with differentiated neck, respectively. After its highest tide, it again retired upwards, toward the oral margin or the lower border of the neck, respectively, in the pottery without or with differentiated neck. In its retiring stages, its area was bordered both above and below by one or a few incised streaks encircling the pottery. As a result of its extreme retirement, there was left only one or a few horizontal streaks around the vessels just below the oral margin or at the upper half of its shoulder. This decorative pattern of the second order thus converging into horizontal streaks, may be looked upon as the decorative pattern of the primary order of geometrical design.

3. Decorative pattern of free mat impression. The mat impression in general was one of the earliest characters of the stone age pottery. Very often it was included in the area occupied by the decorative pattern of curve and spiral design, while in other cases it was exclusive and free from that area. The free mat impression to be discussed here is, of course, that of the latter cases. Such a free mat impression was the decoration of the third order.

As a typical case, this decoration arose and developed upwards, just below the lower border of the retiring decorative pattern of the second order. In another case, it took the same course just below the retiring decorative pattern of the first order. At its highest tide, it occupied almost the whole outer surface of the



FIG. 13.—Type of pottery of the upper earlier stone age.

vessel or of the body of it. After its highest tide it had again just the same destiny as its forerunners.

In its earlier stage the mat impression in general was coarse and rough; but afterwards it became finer and nicer. The free mat impression of the later stage assumed very often a repetition

of pinnate arrangement. Thus the decorative pattern of the fine, pinnately arranged, free mat impression prevailed in the later mediaeval stone age of Japan.

4. Decorative pattern of the secondary order of geometrical design. As a typical case, a few or many incised parallel streaks arose encircling the vessel just below the retiring free mat impression. These stripes correspond to the decoration of the fourth order in general, and that of the secondary order of geometrical design.

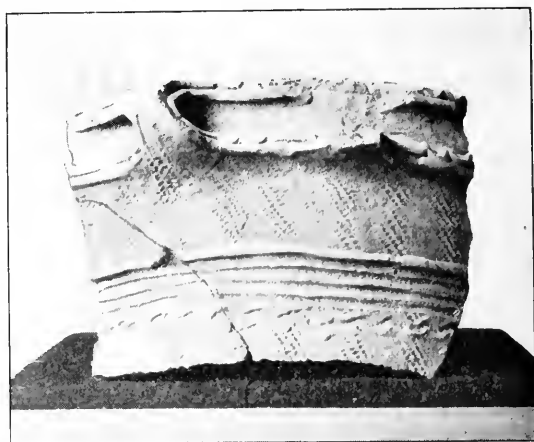


FIG. 14.—Type of pottery of the upper earlier stone age.

This decoration developed upwards hand in hand with the retirement of the free mat impression. When the free mat impression vanished as a result of its extreme retirement, both the primary and secondary decorative patterns of geometrical design became united, forming a compound decorative pattern of geometrical design. In another instance, the decorative pattern of the third order in general persisted as a mat impression itself, or as its modification, an incised false mat impression; then, both the primary and secondary decorative patterns of geometrical design and the mat impression or false mat impression formed together a compound decorative pattern of geometrical design.

The degenerating handles of the vessels belonging to the decorative pattern of the first order persisted until the last of the curve

and spiral design; then they disappeared almost entirely. They coexisted no longer, as a rule, with the well-established decorative pattern of geometrical design, except in the stone age pottery of Riu-kiu.

It may be true that certain elements of the geometrical decorative pattern were imported into Japan from the continent; but I cannot agree by any means with those authors who declare that the whole geometrical decorative pattern was so derived. In my opinion, the change of the decorative pattern of the stone age pottery of Japan from curve and spiral design to geometrical design was chiefly an evolution but not a revolution. Consequently, we are obliged to look upon the artifacts of the stone age of Japan



FIG. 15.—Type of pottery of the middle mediaeval stone age.

as those made by the genuine ancestors of a greater part of us modern Japanese. This view will be confirmed again by a study of the racial types of both the stone age and the modern Japanese.

Looking over all these changes of the stone age pottery, it may safely be said that they were chiefly degenerative in the limitation of the decorative pattern. It appears that the stone age pottery changed or evolved according to the law of the economy of labor and time. Again, the succession of the various orders of decorative pattern corresponds well to Dollo's law as is well known in our palaeontology.

In accordance with these facts and considerations, I subdivide the stone age of Japan chronologically as follows:

1. *Earlier stone age*, or period of bas-relief pattern of curve and spiral design.

Pottery large and very thick; mat impression, very common, coarse, and rough; bas-relief, decorative pattern of curve and



FIG. 16.—Human figure of the middle mediaeval stone age.

spiral design very common; handles, very large and elaborate (figs. 11 and 12).

(1) Lower earlier stone age:—bas-relief pattern of the first order very well developed.

(2) Upper earlier stone age:—bas-relief pattern of the first order usually limited to the upper part of the vessel (figs. 13 and 14).

2. *Mediaeval stone age*, or period of incised pattern of curve and spiral design.

Pottery, moderately thick to thin; mat impression, very common, coarse, and rough to fine and nice; bas-relief patterns very few; incised decorative patterns of curve and spiral design, common; handles, large to very small.



FIG. 17.—Type of pottery of the upper mediaeval stone age.

(1) Lower mediaeval stone age:—pottery, moderately thick; mat impression, coarse and rough; incised patterns of curve and spiral design, very common, very well-developed; handles, large and elaborate.

(2) Middle mediaeval stone age:—pottery, thin; mat impression, fine and nice; incised pattern of curved and spiral design, very common, very often limited to the upper part of the vessel; handles, small and simple (figs. 15 and 16).

(3) Upper mediaeval stone age:—pottery, thin; mat impression, fine and very nice; free mat impression decoration, very well-developed, very often assuming a repetition of pinnate arrangement; incised decorative pattern of curve and spiral design, persisting but rather less common, mostly limited to the upper part of the vessels; handles, small and simple, or entirely absent (fig. 17).

3. *Later stone age*, or period of incised patterns of geometrical design. Pottery, thin; mat impression, less common to entirely absent, besides incised false mat impression; bas-relief decorative patterns, very few; decorative patterns of curve and spiral design, entirely absent; that of geometrical design, common; handles, almost entirely absent, those of the secondary order, different from that of the handles of the preceding ages, might sometimes be present.

(1) Lower later stone age:—mat impression decoration, persisting, usually limited to the upper part of the vessels; incised false mat impression, present.

(2) Upper later stone age:—mat impression decoration, entirely



FIG. 18.—Type of pottery of the Hanibe-Iwaibe period.

absent; incised false mat impression, rather common. The later stone age was followed by the Hanibe-Iwaibe period which belongs to the metal age.

4. *Hanibe-Iwaibe period*, or earlier metal age. Coexistence of the Hanibe pottery, which is very similar to the pottery of the upper later stone age, and the Iwaibe pottery, which is a grayish or dark bluish hard pottery and resembles very much that of the ancient Koreans (figs. 18 and 19).

This period corresponds to the protohistorical and earlier historical ages of Japan. The chronological succession was very gradual in western Japan, while it was interrupted by the absence of the later stone age culture in northeastern Japan where the mediaeval



FIG. 19.—Type of pottery of the Hanibe-Iwaibe period.

stone age culture was followed immediately by the Hanibe-Iwaibe culture. That is, the changes of the culture were an evolution throughout in western Japan, but partly an evolution and partly a revolution in northeastern Japan.

IV. BURIAL CUSTOMS OF THE STONE AGE PEOPLE

The stone age burials of Japan were almost always contracted, as clearly observed by Mr. Uchida, in the site of Tsukumo; by Prof. Suzuki, in the site of Higashi-ataka; by Prof. Hamada and Mr. Torii, in the site of Kô; by Prof. Ôgushi, in the sites of Kô and Tsukumo; by Prof. Kiyono, in the site of Tsukumo; by myself, in the sites of Miyato island, Aoshima, and Kô; by Prof. Koganei and Mr. Shibata, in the site of Kô; by Prof. Hasebe, in the sites of Kô and Tsukumo; and so on; but very rarely extended, as observed by Prof. Kiyono and Ôgushi in the site of Tsukumo.

The bodies, skeletons when we discover them, were laid in tombs either with the back directly down or slightly to one side. The burials on the back appear to be more common in the sites of western Japan, as Tsukumo, Kô, and Higashi-ataka, and in the earlier stone age sites of northeastern Japan, as Aoshima and

certain less important sites (fig. 20); the tilting toward one side appears to be more common in the later sites of northeastern Japan, as Miyato island (fig. 21). In these, the tilting toward the right side was much more common than that toward the left.

The direction of the long axis of the body was exceedingly variable in the sites of northeastern Japan. In the site of Aoshima



FIG. 29.—Burial of the Aoshima type, first stage of the first period.

the head, not the face, of the skeleton was directed north or east or south but never west; in the site of Miyato island, southeast (most common direction in this site) or northeast or northwest but never southwest. It is reported by Profs. Ôgushi and Hasebe that the northeast and southeast directions were most common in the sites of Tsukumo and Kô respectively.

Double burials have been observed to be present very rarely. I once discovered a double burial consisting of a very aged male and a child in the site of Miyato island. The aged man was



FIG. 21.—Miyato island burial.

laid on his right side, assuming an attitude embracing the child who was laid on his back and left side. Mr. Matsuyeda has also discovered a double burial consisting of two adults in the site of Tsukumo. I do not know the sex of these two adults; but, judging

from the photograph presented by Mr. Matsuyeda, one or both of these adults might be that of a male. Both of them were laid on their backs.

Two female skeletons from the site of Aoshima were found with ear ornaments of clay, one on each ear. These ear ornaments are dumb-bell shaped, the anterior and posterior halves being almost of equal size and shape. This type of ear ornament is a common characteristic of the sites of western Japan and the earlier sites of northeastern Japan.

Skeletons of one young female and of a child at the site of Miyato island were found with stone beads as ear ornaments,—one for each ear. The beads belonging to the young woman were made of jade and are charmingly executed. The jade might have been imported into Japan from the continent at such an ancient time. Again, the child skeleton of the double burial mentioned above was found with eight stone beads on the position corresponding to his right ear. Though not attached to any skeleton, another type of ear ornament of clay was obtained from this site. It is rather cup-shaped, the anterior half being much larger than the posterior. This type of ear ornament is characteristic of the later sites of northeastern Japan.

It has also been reported by Profs. Ôgushi, Koganei, and Hasebe, that several skeletons from the site of Kô were found bearing dumb-bell shaped ear ornaments of clay or stone ear ornaments shaped like an incomplete ring; and by Prof. Ogushi that one skeleton from the site of Tsukumo was found bearing ear ornaments made of deer's antler and shaped like an incomplete quadrangular ring. Prof. Ôgushi considers that the ear ornaments made of deer's antler and shaped like an incomplete ring might be prototypes of the stone ear ornaments of similar shape, while Prof. Hamada looks upon the latter as prototypes of the metal ear rings of the earlier metal age of Japan.

One very stout male skeleton from the site of Miyato island was discovered bearing two compact bands consisting of some eighty beads made of bird's bones, around his wrist, and just in front of his wrist five very nice and elegant ornaments, one of which

was made of deer's antler and four of boar's tusks (the deer was a large variety of the sika, and the boar was a very gigantic race or species and is now everywhere extinct).

It has also been reported by Profs. Kiyono, Ôgushi, and Hasebe that some skeletons from the sites of Tsukumo and Kô were found bearing an elegant ornament made of deer's antler, just in front of the wrist.

The majority of the skeletons from the site of Miyato island were found bearing the red tint of iron oxide on the upper portions of their bodies, especially on the face and breast. It might have been thrown over or tinted over the dead body by the mourning relatives and intimates. I have witnessed the fact that the child and young female skeletons were especially rich in this red tint.

One skull from the site of the cave of Ôsakai was reported by Mr. Shibata to have been found tinted all over the face with red color. In the other sites, such as Aoshima, Tsukumo, Kô, Higashi-ataka and Todoroki, no skeleton with red paint was ever discovered.

I have learned from Dr. Krishtofowitsch that a quite analogous burial of skeletons bearing red color was once observed in a certain kulkan near Odessa, excavated by the Geological Institute of the University of Odessa. It may also be analogous to what has been observed in certain Indian burials.

Several skeletons from the site of Miyato island were found lying on a layer of ashes and cinders. This layer of ashes and cinders might have been purposely prepared in the grave for the reception of the dead. In all the other important sites no skeleton was ever found lying on such a layer of ashes and cinders.

As a unique example in the site of the Miyato island, I found one large, heavy, round stone placed directly on a baby skeleton. It is reported by Profs. Ôgushi and Hasebe that such a large, heavy, round stone laid on the thoracic region of a skeleton has been found by no means rarely in the site of Kô. Certain anthropologists consider that such a stone might have been put on the dead to prevent the waking of the spirit. According to the Ainuan belief, any spirit wakened from the dead is a demon, which causes various evils to living people.

As reported by Messrs. Kasai, Motoyama, and Prof. Ôgushi, large jars containing a baby skeleton were sometimes found in certain sites including that of Tsukumo.

As I have clearly observed in the sites of Aoshima and Miyato island, the graves were very shallow. It appears that the dead were laid down in such shallow graves and covered with earth, which formed then a very low heap above the body. The vertical depth from the top of the heap to the floor of the grave measured only about a foot or less. As the grave was so shallow, the highest parts of the skull and knees were almost above the level of the original surface of the ground at the time of burial.

V. CUSTOM OF REMOVING OR MODIFYING SEVERAL TEETH ARTIFICIALLY

The existence of such a custom in the stone age of Japan was first noticed by Prof. Koganei. Afterwards, very abundant data on this subject were added by Profs. Ogushi, Kiyono, Satô, Hasebe and myself.

It appears to me that this custom prevailed not at all or but little in the earlier stone age, so that no sign of the existence of such a custom has yet been discovered in the site of Aoshima; it then increased gradually, so that this custom was demonstrated only in a part of the adults from the sites of Nakazuhama, Prov. of Rikuzen, and Yoyama, Prov. of Shimôsa; it then reached its highest development in the middle to later mediaeval stone age, so that evidence of this custom was found in all the adults from the sites of Miyato island and Tsukumo; it then decreased gradually, so that it was apparent only in part of the adults from the sites of Kô and the second bed from below of the cave of Ôsakai; and finally it disappeared everywhere during the following metal age.

This custom is quite variable as to its types, which may be distinguished as follows. The typical example of the first is to remove the pair of upper canines. The modifications of this type are to remove the upper canine of one side and the second upper incisor or the first upper premolar of the other side; to remove one

of the second incisors, the canine and the first premolar of one side and two of the same of the other side of the upper jaw; and to remove two or three of the same of either side of the upper jaw.

The typical practice of the second type is to remove all the four canines of the upper and lower jaws. The modifications of this type correspond to those of the first type in both the upper and lower jaws. In a few examples the first upper incisors were also removed.

The third type and its modifications are to remove all the lower incisors or all the lower incisors and canines; besides they correspond to the first type and its modifications in the upper jaw.

Another very unusual modification of the third type is to remove the pair of upper canines and all the lower incisors and canines and to modify artificially the natural form of all the four upper incisors. A unique example of this rare type has been obtained by Prof. Koganei from the site of Kô. This example may possibly be feminine; her first upper incisors are three-pointed with two artificial indentations and her second upper incisors two-pointed with one artificial indentation.

The first and second types and their modifications are proved to exist in the sites of eastern middle to northeastern Japan, while all the three types and their modifications are found to exist in the sites of western Japan. According to Prof. Hasebe, the third type and its modifications appear to be limited to female skeletons, in the sites of Tsukumo and Kô; but according to Prof. Ôgushi and myself there might be some exceptions to this rule.

This custom was not found at all in the child skeletons. It appears that the operation of removing several teeth had been carried on in the adolescent stage in both men and women. Such a custom of removing or modifying several teeth is reported to exist among many races with primitive culture. In the neighborhood of Japan, some of the aborigines of Formosa and the Philippines have such a custom, while the modern Ainu have no such custom at all.

VI. SKELETAL CHARACTERS OF THE STONE AGE PEOPLE OF JAPAN—RACIAL TYPES

The goodly number of skeletons hitherto found in the stone age sites of Japan all show a uniformity in certain characters, with a considerable divergency in certain other characters. Their common characters are as follows:

Common Characters. Calvarium, rather low and flattened above, being not very convex; lambda-inion curve, long and strongly curved; inion-opisthion curve, very short. *Os incae* or interparietals, often well-developed, consisting of two to four conspicuous pieces. Glabella, *eminentia supra-glabellaris* and superciliary ridges usually united together so as to form a conspicuous, rhomboidal, boss-like projection just above the root of nose. Face, shallow, very wide with jugals prominently projecting. Zygomatic arches, very deep and stout. Upper edges of orbits, almost horizontal instead of being divergent downwards. Nasals, usually narrow, strongly arched up, being strongly curved in horizontal section; but, in a few of the female skulls, they are observed to be rather flattened and not arched up so much. Ascending bar of mandible, nearly perpendicular to the horizontal bar. Dental arches curved like a half of either an ellipse or a circle, the anterior parts being smoothly curved and not angular at the corners corresponding to the canines.

Vertebrae, not very stout. Sacrum, appearing to be usually dolichohieric and curved very feebly. Ribs, extraordinarily deep and stout. All the long bones of both the upper and lower limbs are very stout, with very well-developed projections and keels for the attachment of tendons of muscles; hence it is also evident that the muscles might also be very well-developed. Metacarpals, metatarsals, and phalanges appearing to be rather slender.

Proportion of the length of fore-arm to that of upper arm, near that in the Ainu, being larger than that in the major modern Japanese. Greater tuberosity of humerus, high, arising almost to the same level as the head; deltoid process strong bicipital. Both radius and ulna curved very conspicuously; process of radius, very strong.

Femur, curved and obtorted very strongly; *linea aspera*, extraordinarily well-developed; third trochanter, often well-developed and sometimes attaining an enormous size. In some skeletons the upper halves of the femurs are strongly compressed antero-posteriorly. Tibia, strongly curved, sometimes strongly compressed laterally; anterior keel, blunt, being rounded in horizontal section

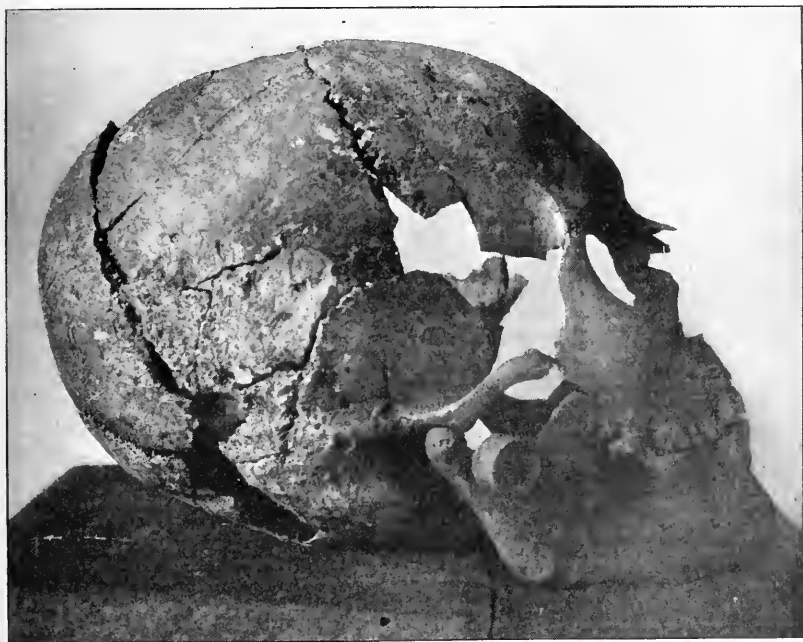


FIG. 22.—Aoshima skull, first stage of the first period.

(that in the major modern Japanese forms a sharp cutting edge). Fibula, extremely stout with a number of very well-developed vertical keels and a number of concave surfaces bordered by these keels, very often strongly compressed laterally. The longer axis of the posterior surface of calcaneum inclines inward down, and outward up, instead of being nearly vertical or just the reverse. Lower surface of foot, flat, being not very concave.

Almost all these common characters are also represented in the skeletons of the modern Ainu. Again, in many of these common

characters the stone age people of Japan and the Ainu appear to resemble the upper palaeolithic people and a certain part of the neolithic people of Europe.

Notwithstanding these common characters are represented, the skeletons from the stone age sites of Japan show a considerable divergence in the other characters. I will proceed with my description, subdividing them into a number of racial types for convenience as follows:

A. *Aoshima Type*. Skeletons from the site of Aoshima, and a part of the skeletons from the site of Miyato island. Moderately short, male adults standing about five feet two to four inches. Large-headed. Dolicho-mesocephalic. Glenoid fossae, shallow; post-glenoid spine, rather deep. Shallow-faced; though the face is not so shallow in absolute measurement, yet it is so broad as to be ranked among shallow-faced types in facial index; forehead, retired, and face, convex in lateral view, more or less strongly prognathous. Floor of the narial cavity and front surface of the upper jaw communicated together by a pair of grooves. Torus palatinus, often well-developed. Mandible, very strong; chin, not very strongly projected, and rounded in upper and lower view, except in some female skulls. Palatine and dental arches of both jaws, more or less long and large, like a half of an ellipse. Teeth, strong; molars, often of unreduced type, the upper ones being usually four-cusped and the lower ones usually five-cusped (fig. 22).

B. *Miyato Dwarf Type*. Part of the skeletons from the site of Miyato island; also a part of those from the sites of Tsukumo and Kô. Very short, male adults standing about five feet to five feet two inches. Size of head, moderate; meso-brachycephalic, and also to brachycephalic. Glenoid fossae and post-glenoid spine, moderate. Shallow-faced, the face being very shallow both in absolute measurement and in proportion; forehead, not retired; straight-faced, orthognathous.

Floor of the narial cavity and front surface of the upper jaw parted from each other by a ridge. Torus palatinus, not well-developed. Mandible, rather weak; chin, strongly projected, angular in upper and low view, quite like that of the European.

Palatine and dental arches of both jaws, short and small, like a half of a circle. Teeth, weak; molars, of reduced type, the second and third upper ones being usually three-cusped and the second and third lower ones usually four-cusped.

The dwarf type of the sites of Tsukumo and Kô, which is provisionally referred to the present type, appears to be more brachycephalic than the typical type of the site of Miyato island.

C. Tsukumo Tall Type. Part of the skeletons from the site of Tsukumo, and also of Kô. Tall, male adults standing about five feet six or seven inches. Large-headed, but may be moderate if taken in proportion to the height of body. Meso-brachycephalic. Glenoid fossae, deep; post-glenoid spine, very strongly reduced. Shallow-faced; forehead, not retired; straight-faced; orthognathous. Floor of the nasal cavity and front surface of the upper jaw well-parted from each other by a ridge. Torus palatinus, not well-developed. Mandible, weak; chin, strongly projected, angular in upper and lower jaw, quite like that of the European. Palatine and dental arches of both jaws, short and small like a half of a circle. Teeth, very weak; molars of reduced type; the second and third upper ones being usually three-cusped and the second and third lower ones usually four-cusped. Tibia and fibula, long, both in absolute length and in proportion to the length of the femur.

The longer bones of the lower limbs of this type much resemble those of the Crô-Magnon type, though the former type is evidently much more progressive than the latter type in many cranial characters. Moreover, some broad-headed skulls of the Miyato dwarf and Tsukumo tall types resemble very strongly the skulls of the Furfoot-Grenelle type. The Miyato dwarf and the Tsukumo tall types are quite like the European in the general structure of the face and especially in that of the jaws and teeth. Indeed, they are nearer the European than the Ainu are to the same.

VII. RACIAL TYPES OF THE MODERN JAPANESE AND AINU

It has become evident by the studies of Profs. Koganei and Hasebe that there are two racial types among the modern Ainu

of Hokkaido. One type, including about two-thirds of the total number of the modern Ainu of Hokkaido, comparatively tall (about five feet three to four inches or near that) and comparatively long-headed (cephalic index, ca. $75-76\pm$), while the other type, comprising about one-third the total number, is very short (about five feet to five feet one inch) and comparatively broad-headed (cephalic index, ca. $79-80\pm$). As far as I can judge from Mr. Torii's numerical tables, the modern Ainu of the Kurile islands appear to consist chiefly of the first type. The modern Ainu of Saghalin being also comparatively tall and long-headed, appear to me also to consist chiefly of the first type.



FIG. 23.—*Left*, modern Ainu skull; *Right*, skull of the Miyato type.

The first type of the modern Ainu appears to correspond well to the Aoshima type of the stone age, and the second type of the same to the Miyato dwarf type of the stone age (fig. 23).

Analytical studies of the racial types of the modern Japanese have been made by Prof. Hasebe and Mr. Matsumura. As a result of their analytical studies, four racial types have been recognized to exist among the modern Japanese,—Ishikawa and Okayama types by Prof. Hasebe, and Chikuzen and Satsuma types by Mr. Matsumura. The Ishikawa type is characterized by the very short stature (five feet to five feet one inch), not very broad head (cephalic index, ca. $78\pm$), straight and shallow face and weak jaws;

the Okayama type by the tall stature (five feet five inches or more), broad head (cephalic index, ca. 82 or more) convex and deep face and strong jaws; the Chikuzen type by the tall stature (five feet five inches or more) and not very broad head (cephalic index, ca. $78\pm$); and the Satsuma type by the very short stature (five feet one inch or near that) and broad head (cephalic index, ca. $82\pm$).

I have been informed privately by Mr. Matsumura that both his Chikuzen and Satsuma types may be shallow-faced. The Ishikawa type is to be met with abundantly in the northern middle part and northeastern part of the main island; the Okayama type in the coastal districts around the Inland sea, in Kinai, *i.e.*, the former capital Kyôto and its vicinity, and in the western middle part of the main island; the Chikuzen type in the northern part of Kiushû; and the Satsuma type in the southern parts of both Kiushû and Shikoku.

The Ishikawa type appears nearly, though not yet thoroughly, to correspond to the Miyato dwarf type of the stone age, and the Chikuzen type also nearly to the Tsukumo tall type of the stone age. The Ishikawa and Chikuzen types may possibly be Mongolianized survivors of the Miyato dwarf and Tsukumo tall types, respectively. In the stone age already, the shorter type of the sites of Tsukumo and Kô appears to be more broad-headed than the typical Miyato dwarf type of the site of Miyato island. Then, there may be a certain probability that both these dwarf types belong to local varieties of one and the same branch which show the divergency, being more long-headed northeastwards and more broad-headed southwestwards. If this view be correct we may expect the presence of a racial type characterized by short stature and broad head in the extreme southwestern Japan. Then, the Satsuma type fits strictly to the expected racial type. The Okayama type, which has been looked upon by Prof. Hasebe himself to be the Korean type of the Mongolian stock, is not yet actually discovered from the stone age sites of Japan. This type might have invaded Japan either at the close of the stone age or at the dawn of the metal age.

VIII. NATURAL POSITION OF THE STONE AGE PEOPLE OF JAPAN— CONCLUDING REMARKS

The Ainu, nowadays, are a quite isolated and well characterized race. Such an isolated distribution cannot in any case be looked upon as a primary condition. The races of mankind are comparable to the local varieties of animals. We have learned that the local varieties, or a group of local species closely allied with each other, should primarily be ranged or distributed like a chain or a network. The isolated distribution of the Ainu, nowadays, represents only a single link of a chain or a network. Thus, our search for the presumed missing links which formerly connected the Ainu to their primary relatives of far distant lands, proceeds. Now, our search is being answered by the successive discoveries of the human skeletons of the stone age people of Japan.

Many European authorities consider that the Caucasian, Ainu, and Australian are to be grouped together in a great racial stock. And, I think they are right. In many physical characters the Ainu appear to be much more progressive than the Australian and a little more primitive than the European.

As already stated, the stone age people of Japan are very near the Ainu, and some of them are more closely related to the European than the Ainu due to the same being evidently more progressive than the Ainu. And it is almost evident that they are to be grouped together with the Caucasian, so far as the Ainu should be grouped together with the latter. I have come to look upon the Miyato dwarf and Tsukumo tall types as corresponding to two discoveries of the missing links of the great racial chain, namely the Aino-Caucasian. The Aoshima type, of which little altered survivors may be represented by the more typical type of the modern Ainu, might probably be very near the ancestral type of both the Miyato dwarf and the Tsukumo tall type.

The Aino-Caucasian range from Japan to Europe along the margin of the Asiatic continent, while the Mongolian occupy the central main part and the north of the same. Why has such a distribution arisen? It is obvious from the "theory of center of evolution and dispersion" developed by the eminent authorities

of the American Museum of Natural History. The Aino-Caucasian are pre-Mongolian in a certain point of view; the former corresponds to the group which had been forced to move eastwards, southeastwards, southwards, southwestwards, and westwards—always outwards, toward the margin of the continent from the center of evolution and dispersion—by the latter.

I call the Japanese Aino-Caucasian—the Aoshima, Miyato dwarf and Tsukumo tall types, including the modern Ainu,—all together by the name Pan-Ainu. Among the Pan-Ainu, the Aoshima type was the first arrival in Japan. This type is found from the earlier stone age of northeastern Japan almost as a pure race, and from the mediaeval stone age of the same as a race mixed with the next type. Nowadays, it lives in Hokkaido as a race mixed with the next type, and in the Kurile islands and in Saghalin almost as a pure race.

The next to arrive or to arise in Japan was the Miyato dwarf type and possibly also its presumed cousins in western Japan. This type is found from the mediaeval stone age of northeastern Japan as a race mixed with the foregoing type; and its presumed cousins are found from the mediaeval stone age of western Japan as a race mixed with the following type. Nowadays, it lives in Hokkaidô as a race mixed with the foregoing type, and in northeastern Japan and in the north central part of the main island as a mixed race more or less Mongolianized; and its presumed cousins live in southwestern Japan as a mixed race more or less Mongolianized. This type and its presumed cousins are separated from each other in recent distribution by the two following newcomers.

The third to arrive or to arise in Japan was the Tsukumo tall type. It is found from the mediaeval stone age of western Japan as a race mixed with the presumed cousins of the Miyato type. Nowadays, it lives in the northern part of western Japan as a mixed race Mongolianized; and also scattered in every part of Japan, for this type appears to be very common in the former knight class of Japan.

The last newcomer to Japan was the Okayama type of the Mongolian stock. This type is not yet actually found from the

stone age of Japan. Nowadays, it occupies middle western Japan including the former capital of Japan and its vicinity.

The racial and cultural assimilation had been carried on just the reverse of the racial arrivals. It would appear that the Miyato dwarf type had assimilated the Aoshima type to a certain extent in northeastern Japan, while its presumed cousins had been assimilated to a great extent by the Tsukumo tall type in western Japan. There are certain reasons for assuming that the embryonal empire of Japan had been founded by the Okayama type, or by the union of this type and the surrendered aboriginals of western Japan, who consisted of the Tsukumo tall type and the presumed cousins of the Miyato dwarf type. A large part of the surrendered aboriginals served as the warriors of the Imperial army. These warriors invaded eastern and northeastern Japan conquering and assimilating, step by step, the wild aboriginals of these districts. Thus, the type, which has lost its national independence last, was the very Ainu who were the first to arrive in Japan.

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BOOK REVIEWS

METHODS AND PRINCIPLES

Vererbung und Auslese. Grundriss der Gesellschaftsbiologie und der Lehre vom Rassedienst. WILHELM SCHALLMAYER. Dritte, durchwegs umgearbeitete und vermehrte Auflage. Jena: Gustav Fischer, 1918. XVI, 536 pp.

Dr. Schallmayer is known as one of the most energetic champions of *Rassehygiene* or eugenics, and the book now presented in a revised form ranks in Germany as one of the standard works the movement has produced. It is undoubtedly a comprehensive and thorough introduction to eugenic philosophy, especially valuable for the full bibliographic references to relevant literature. On the other hand, the mania for citing authorities and even subjective utterances of eminent writers detracts from the readableness of the book, which further loses through needless detail in the discussion of special points. Thus, the discussion of medical technique in connection with health certificates for bridegroom and bride (398 seq.) seems quite uncalled for.

While Schallmayer is inevitably subjective in framing his ethical aspirations, his views generally commend themselves by an unusual measure of sanity. For a eugenicist his position on the race question is remarkably temperate. He does not accept culture as a safe index of racial ability (p. 190) and devotes a whole chapter to an appreciation of the Chinese (pp. 282-310). He specifically repudiates the cult of Gobineau and refuses to identify eugenic aims with exclusive attention to the Nordic elements in the population (pp. 269, 375-387). On other specifically eugenic questions, such as birth control (p. 493), Schallmayer likewise assumes a moderate position.

The author's political ideals have a distinctly liberal bias, especially when contrasted with those of some of his fellow-eugenicists in our midst. For example, material success is not accepted without considerable qualification as proof of inherited worth (pp. 146, 226). Schallmayer is willing to go rather far in the direction of democracy and rightly remarks:

Eine gesunde Demokratie schliesst eine Leistungsaristokratie nicht nur nicht aus, sondern ist ohne eine solche überhaupt nicht möglich (p. 462).

A somewhat curious conception of a European league of nations is offered (pp. 494-500). The primary motive is the preservation of Europe from Asiatic and American encroachments. Russia and England are to be excluded because their coöperation would render the formation of the league more difficult and diminish its internal strength.

Ethnologically the author lapses into occasional naïveté. Exogamy is twice defined as a prohibition against marriage within the tribe, *Stamm* (pp. 7, 393). And the pedigrees of the Samoans (p. 388) are not likely to shed much light on problems of heredity.

On the whole, the book may be recommended as a temperate exposition of the eugenic point of view.

ROBERT H. LOWIE

NORTH AMERICA

Seneca Fiction, Legends and Myths: collected by JEREMIAH CURTIN and J. N. B. HEWITT. Edited by J. N. B. HEWITT. (Thirty-second Annual Report of the Bureau of American Ethnology.) Washington, 1918.

This is one of the most important collections of traditional narratives from any native American people both as regards quantity and quality. Curtin's data were collected from 1883 to 1887, mostly in English, Hewitt's in 1896 in Seneca. Two of Hewitt's legends are in text with interlinear translation; the others are given in English only. More than three-fourths of the narratives are Curtin's but nearly half the bulk is from Hewitt. As the average length of the one hundred and thirty-eight stories is about six pages, it is evident that the rendering is full and that nothing has been lost through a desire to hurry through to a gist of the narratives. The native flavor is strong. Curtin's versions, although obviously somewhat less close to the original, hold up excellently in this regard, while Hewitt's must be regarded as models. They remind in many ways of the famous Algonkin translations of William Jones. There is no doubt that a certain quality of English text can be attained only by a recorder who possesses an intimate knowledge of the native language of his informants, such as the majority of field ethnologists in this country are far from possessing. This statement is not to be considered as suggesting that the majority of our Indian traditional material is worthless. For comparative purposes bulk of data and geographical inclusiveness are indispensable. It is far better that we should have collections of tales lacking in literary flavor than not to

have them at all. Yet in the face of a volume which like this one is at once monumental and faithful in its reproduction of the native style, it is well to recognize its unusual virtues.

Hewitt has divided the narratives into fiction, legends, and myths, plus some traditions and tales. In his introduction he discusses the development and relations of these several types. It is doubtful how far this classification would be applicable among other peoples. Some of Hewitt's criteria no doubt do apply elsewhere, and yet the attempt to schematize rigorously would be likely in most cases to lead to artificiality. For ordinary purposes it will continue to be most practicable to assemble all material from one people and divide it so far as may be on the basis of distinctions which they themselves have worked out, or which may be readily apparent in the given case.

Much the same applies to Hewitt's other theoretical point, namely that much of the collecting of native traditions has been so hasty as to be unfavorable to the acquisition of the more philosophic and poetic creations, and that it has frequently been accompanied by an over-accentuation of the coarse and obscene. The first part of this criticism can be met with considerations similar to those just discussed in regard to style. It is certainly desirable that we record the finest specimens of the product of the native mind. The search for values in civilization has the greatest importance, yet has often been ignored or looked upon askance as something unscientific. On the other hand there are results other than values or qualities that can be derived from cultures. The interest in the actualities of a civilization is as justified as in its idealities, and for purposes of tracing historic development and determining causes, it is indispensable that the material available be both as full as possible and free from selection by any standard of quality. It will be to the advantage of both lines of work if students devoted primarily to each will meet the efforts of the other camp with full sympathy.

As regards the point of coarseness in native tradition, which Hewitt revives, we seem to have come to the stage where one group charges the other with being obscene-minded and this party retaliates with the accusation of unscientific prudishness. Here again a recognition of the value of each method of approach appears called for. It seems worth while only to add that there undoubtedly exist differences in temperament of nations as well as observers. If Hewitt's work had lain wholly among Pacific Coast instead of Iroquoian tribes his attitude would probably have been less positive. Part of the criticism which he directs against observers attaches to the tribes with which fortune has

thrown them into contact. Nevertheless Hewitt's discussion is stimulating and well worth while as a reminder that two attitudes are entertainable.

All in all, this is a notable piece of work and arouses the lively hope that it may continue to be followed, and soon, by others from the pen of the part author and editor of the whole.

A. L. KROEBER

OCEANIA

The Hawaiian Romance of Laieikawai, with Introduction and Translation. MARTHA WARREN BECKWITH. (Thirty-third Annual Report of the Bureau of American Ethnology, pp. 285-666.) Washington, 1919.

The Laieikawai is a Hawaiian romance, heavily flavored with mythology, epic in length and treatment, but with the love interest dominant. It contains many songs, but is mainly in prose. How long it had been preserved orally is not known. Haleole, a native, published it in Hawaiian in 1863 that there might "abide in the Hawaiian people the love of their ancestors and their country." The theme as well as the language were adapted by Haleole to his day; yet the modifications introduced by him into the ancient tale appear to be very slight. It is the longest and in many ways the greatest piece of Polynesian literature preserved. The plot, seemingly inchoate at first, develops through six hours of recital or 137 pages of print with ever-increasing inner unity and magnificence of conception. The tale is a monument of the civilization that produced it.

The Laieikawai was reprinted in Hawaiian in 1888, but has been available in translation only in greatly condensed versions, in King Kalakaua's book of legends and in an article by Rae in the *Journal of American Folk-Lore* for 1900. Miss Beckwith gives the full text, an apparently accurate translation, notes on the text, and an appendix of abstracts of other Hawaiian tales collected by Fornander. In her Introduction she reviews especially the mythology and the art of composition involved. The latter section contains much of interest to students of comparative literature. Miss Beckwith's work throughout is done in a scholarly manner; and the intrinsic value of the material which she has made generally available is so great that her painstaking and successful labor deserves grateful recognition.

A. L. KROEBER

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DISCUSSION AND CORRESPONDENCE

AFRICA AND THE DISCOVERY OF AMERICA

I wish most emphatically to protest against Professor Dixon's unique method in attacking my book, *Africa and the Discovery of America*. I do not refer to his inability to accept my views, but to the manner in which he represents them to readers of the *Anthropologist*. I decline to answer in the same abusive language as that used by him, and it is impossible for anyone to answer generalities. Fortunately Professor Dixon has made a number of specific charges, and all of these I shall analyze here.

Prof. Dixon says (p. 179):

In one at least of his attempts to prove the "atrocious forgery" of much of Columbus' writings and those of Ramon Pane, Professor Wiener shows a readiness to seek for and accept far-fetched explanations, a tendency which becomes more noticeable in his later chapters. Thus he rejects as a lie the story told by Columbus of fishing by the aid of the remora or sucking-fish, and declares it to have been derived from Odoric of Pordenone's account of cormorant fishing in eastern China. A little investigation would have shown that improbable as it may seem, there is no good reason to brand it as a pure invention or plagiarism, for precisely this same method has been and still is employed in Melanesia and its practicability has recently been demonstrated by tests in New York.

I am not dealing with the probability or improbability of the remora fishing, but with the *literary lie* connected with it. On p. 55 I say:

Our purpose, however, is not to get at the correct text of Columbus, but to study the manner in which the errors were perpetuated and finally received the sanction of Columbus himself, who thus became a coadjutor in the forgeries.

On p. 61 I refer to the fishing story as follows:

We can study the formation of another ghost word in a passage contained in Peter Martyr and Bernaldez, and, although this ghost word is not necessarily due to Columbus, the lie told in connection with it was published in 1504 in the *Libretto*, and Columbus never took the trouble to deny it.

I three times specifically absolved Columbus of this lie (pp. 61, 65, 67). I showed that Peter Martyr's *guaicanum*, the native name of the fish caught by the remora, was a ghost word, arising out of Bernaldez's *casa*, and was trying to get at the basis of "the older original from which Bernaldez got his version." I showed how the well-known cormorant

story in Odoric was in the Italian version changed into that of the remora, which puzzled Yule before me, for he said, "This (Italian) edition has in this passage an exceedingly curious variation, difficult to account for."¹ One can only be puzzled at the attempt of the gentlemen in New York to prove the veracity of the remora story, since it has been very frequently recorded. Mas'ūdī, Ibn Batūtah, Idrīsī, Al-Qazwīnī, and Ad-Damīrī hint at the catching of the wāl off the shore of Zanzibar by means of the remora, and the works of Santos, Dampier, Commerson, Salt, and Middleton tell specifically of the turtle fishing by means of the remora on the east coast of Africa, from Zanzibar to Natal. In fact, that the whole story in Bernaldez and in the writings based on Columbus' *Second Voyage* is a base lie, is proved, beyond any possibility of cavil, from an entry in the Swahili Dictionary:²

Kassa, turtle, of which there are various kinds. . . . The *kassa* is caught by means of the *tāza* fish, which the fishermen carry alive with them. When they see a *kassa*, they let the *tāza* go after it, to stick fast to the *kassa*. When the *tāza* has seized it, the fisherman throws a harpoon and takes the *kassa* out of the sea, the *tāza* letting go instantly when exposed to the air.

This shows that Bernaldez's *caza* is taken out of an account about Zanzibar, and either there was an Arabico-African influence in America before Columbus, or the whole story is a huge lie.

Again Prof. Dixon says (p. 179):

As the earliest certain record the author has been able to discover referring to the use of tobacco in Africa is at the end of the sixteenth century, it is obviously incumbent on him, if he is to prove his theory, to find indirect evidence of its earlier presence.

In the index of my book may be found the entry: "*Mentioned in Africa in the fifteenth century*, p. 111," and on that page I say:

An Arabic source speaks of it as in use in the middle of the ninth century of the hegira, which would be about the middle of the fifteenth century; this date, however, is not certain and needs verification.

I give the reference in the footnotes: Cap. Binger, *Du Niger au Golfe de Guinée*, Paris, 1892, vol. II, p. 364. Here we read:

M. Houdas a encore eu l'amabilité de nous donner la note ci-jointe, qui confirmerait bien que le tabac est, sinon originaire du Soudan, au moins qu'il y est connu depuis les temps reculés. 'A Koubacça, le tasert aussi de monnaie. Par

¹ Sir Henry Yule, *Cathay and the Way Thither*, London, 1913, vol. II, p. 189.

² L. Krapf, *A Dictionary of the Swahili Language*, London, 1882, p. 130 f.

une singulière homophonie avec le nom européen, les habitants du Dârfour l'appellent, dans leur langage, *taba*. Bien plus, ce nom de *taba* est commun dans tout le Soudan. Au Fezzan et à Tripoli de Barbarie, on l'appelle *tabgha*. J'ai lu une cassidah, ou pièce de vers, composée par un Bakride ou descendant de la famille du khalife Abou Bakr, afin de prouver que fumer n'est pas pêcher. Ces vers, je crois, datent d'environ le milieu du IX^e siècle de l'hégire. En voici quelquesuns: Dieu tout-puissant a fait sortir du sol de notre pays une plante dont le vrai nom est *tabgha*. Si quelqu'un, dans son ignorance, te soutient que cette plante est défendue, dis-lui: Comment prouves-tu ce que tu avances? Par quel verset du Coran?

Since Houdas was not absolutely sure of the date, which might as easily be earlier than the middle of the fifteenth century as later, I advised caution as regards the date. That there are no other sources for smoking in Africa in the fifteenth century is only natural: there are no works whatsoever of the fifteenth century that deal with the manners of the Africans.

In a footnote on page 180 Prof. Dixon says:

Of the two references given to prove that tobacco is native in Africa, one does not even refer to the subject, while the other clearly indicates the exact opposite to what Prof. Wiener says. Similar examples of gross carelessness or direct misrepresentation abound.

This refers to my statement (p. 111): "The *Nicotiana tabacum* grows wild in Africa, and so does the *Nicotiana rustica*." For the first the footnote reads: "F. Welwitsch, *Catalogue of the African Plants*, London 1898, vol. 1³, p. 754." In Welwitsch's work, where plants are distinguished as "cultivated," "escaped from cultivation," and "wild," the entry is: "*N. Tabacum*. Icolo e Bengo. At the banks of the river Bengo, near Funda, *wild*." The second has the footnote: "G. Schweinfurth, *Im Herzen von Afrika*, Leipzig, London, 1874, vol. 1., p. 295." The page reference, by oversight, is given as 295, instead of 279, but this does not excuse the reviewer's statement, since there are only two references to "tobacco" in the Index, one of them being the following in the English translation: ¹

Quite an open question I think it is, whether the *N. rustica* is of American origin. . . . Barth has given his opinion that the tobacco is a native of Logane (Mosgoo). . . . The conjecture is tenable, that they probably favoured the propagation of the foreign growth, because smoking, either of the common tobacco (*N. rustica*) or of some other aromatic weed, had in some way already been a practice amongst them.

¹ E. E. Frewer, *The Heart of Africa*, London, 1873, vol. 1, p. 255.

Barth¹ says:

We had already seen much cultivation of tobacco in this country, and were impressed with the opinion, however strange it may seem, that it was an indigenous plant, and not introduced at a recent period.

Prof. Dixon continues (p. 180):

The second stage in the argument, *viz.*, that we have no early accounts of tobacco or the use of smoking in America is equally unconvincing. He points out what is indeed a puzzling fact, that Columbus in his first voyage makes but one very uncertain reference to smoking, and that in the earlier accounts of Florida its use is not mentioned. On the other hand he minimizes and quite misunderstands (as well as mistranslates!) the evidence afforded by Sahagun and Bernal Diaz.

In regard to Bernal Diaz I said (p. 126): "Bernal Diaz del Castillo says that after Montezuma had partaken of his dinner he smoked liquid amber wrapped in leaves called *tabaco*, which put him to sleep," and quoted the Spanish passage: "También le ponían en la mesa tres cañutos muy pintados y dorados, y dentro traían liquidámbar revuelto con unas yerbas que se dice *tabaco* y cuando acababa de comer, después que le habían cantado y bailado, y alzada la mesa, tomaba el humo de uno de aquellos cañutos, y muy poco, y con ello se dormía." Let any Spanish scholar show that I "minimize and quite misunderstand (as well as mistranslate!)" the passage. There is no reference in Bernal Diaz to smoking, but only to sniffing incense. This is in complete agreement with Grijalva's account, in 1518, as recorded by Oviedo:²

And the chief Indian . . . gave to each of the Christians, who were seated, a small tube which was burning at one end, which are made in such a way that after they are lighted they slowly diminish and are consumed until they stop burning, without giving out a flame, just as the incense sticks of Valencia do, and the smoke which came out of them gave forth a fine odor. And the Indians made signs to the Christians that they should not allow any of the smoke to pass away, as when one takes tobacco.³

¹ *Travels and Discoveries in North and Central Africa*, London, 1857, vol. III, p. 229.

² *Historia general y natural de las Indias*, Madrid, 1851, vol. I, p. 525.

³ "Y el general, con los que el indio principal señaló, sentados, dió este al general é á cada uno de los chripstianos que estaban sentados un cañuto encendido por el un cabo, que son fechos de manera que despues de encendidos poco á poco se van gastando é consumiéndose entre sí hasta se acabar ardiendo sin alçar llama, assi como lo suelen haçer los pivetes de Valencia, é olian muy bien ellos y el humo que dellos salia: é haçian señas los indios á los chripstianos que no dexassen perder ó passar aquel humo, como quien toma tabaco."

It is clear from the last sentence that the Indians did not smoke tobacco, but were only sniffing incense. That this account is correct is proved by hundreds of representations, in the Aztec Manuscripts, of the priest with the *yetecomall*, held in his hands, the finest being the picture of Montezuma; there being no case on record in which the tube is held in the mouth for smoking.¹ The quotation from Sahagun is too long for reproduction. It is given by me on p. 148 f. The reader may compare it with the original and convince himself that my translation is substantially correct. To this I shall return further on.

Again Prof. Dixon says (p. 180):

He ridicules Oviedo's earlier errors in confusing the Antillean custom of inhaling cohoba (*Piptadenia peregrina*) with the smoking of tobacco, and denies *in toto* the former practice with its use of the bifurcated snuffing tube; a denial which, in view of Uhle's and Safford's careful studies, is without force.

In my book I say (p. 113):

Neither Ramon Pane nor Columbus refers to the *smoking of cogioba*, but only to its use as an inhaled powder.

Is this a denial *in toto*, etc.? As to the bifurcated reed, I say (p. 107):

From all this it follows that the implement used for errhines was a small funnel, which would be represented as Y, and which Columbus, who apparently saw the illustration in a book, mistook for a forked reed. It was the thinner end which was inserted in the nose, and it is not practicable to devise a forked reed, in order to insert the fork into the nose. Certainly no such implement could have been used for smoking, as has been shown by experiment.

At the time of writing I did not know of Uhle and Safford. I am again grateful for being reminded of authorities which confirm my deductions in every detail. Safford² shows conclusively that neither Columbus nor Ramon Pane described *smoking of tobacco*, but snuffing of a narcotic, which is precisely my argument. Safford, too, ridicules Oviedo, and ends with the words:³

Oviedo, unfortunately, has been quoted by many authors, and his Y-shaped figure, with its branches so diverging that they could not possibly have been simultaneously inserted in the nostrils of a human being, has been copied again and again.

¹ This matter I shall treat more fully in my second volume.

² Identity of cohoba, the narcotic snuff of ancient Haiti, in *Journal of the Washington Academy of Sciences*, vol. VI, p. 547 ff.

³ *Ibid.*, p. 549.

The next passage in Prof. Dixon's review is too long to reproduce here. It ridicules my philological derivation of the Tupi-Guarani words for "tobacco" from Lat. *bitumen*. I ask the reader to read the passage and compare it with my deduction (p. 135):

At the end of the fifteenth century the Arabic influence in medicine was not yet extinct in Portugal and Spain, and if the Arab. *tubbāq* passed into their languages in all its different significances connected with that aromatic plant, then *betume* must have acquired the same various meanings. It is this word which was taken by the Portuguese, with the tobacco plant, to Brazil, at the same time that Portuguese *matraca* entered into Tupi.

What about *matraca*? Is this, too, ridiculous? Prof. Dixon says (p. 181):

It was this word which, with the plant itself, had been taken by the Portuguese pilot of Pigafetta to Brazil more than thirty-five years before! Comment seems superfluous.

What I say is this:

The latter fact (the entrance of *matraca* into Tupi) happened before 1519, possibly through that very pilot who accompanied Pigafetta on his Voyage around the World.

In the next onslaught, too long to quote here, my veracity in quoting from Jaques Cartier is assailed, with the following comments. "'Prunes' in English is not the equivalent of '*prunes*' in French!" This is news indeed. Any dictionary will show that Fr. *prunes* means both plums and prunes. If necessary, the word *sèches* is added to distinguish the second from the first. "The use of 'apples' in Cartier's text is, as Professor Wiener failed to note, due to a misprint of 'pommes' for 'prunes'." *Pommes* occurs twice after *plums*:¹ "They likewise have *plums*, which they dry as we do for the winter, which they name Honesta; figs, nuts, pears, *apples*, and other fruits, and beans, which they call Sahe; nuts, Daheya; figs, Honesta; *apples*." Consequently this cannot be a misprint for *prunes*. Besides, the facsimile MS. of Jaques Cartier's book has distinctly *pommes*, and not *prunes*.² Prof. Dixon says (p. 181):

Cartier does *not* say that the Indians had names for all of the seven articles which he enumerates, and he gives the names only for four of them, viz., figs., plums ("prunes" in English is not the equivalent of "prunes" in French!) cloves and cinnamon.

¹ J. P. Baxter, *A Memoir of Jacques Cartier*, New York, 1906, p. 110 f.

² *Ibid.*, pp. 289, 290.

I say (p. 137):

At the same time he mentions figs, cloves, and cinnamon, oranges, almonds, and apples, as known to the Indians and possessing Indian names.

I did not say that six (not seven) articles all had Indian names; but they were all known to the Indians, and, of course, if the Indians understood Cartier, they all must have had Indian names. But I continued: "There is one circumstance which casts a doubt on the whole story." So I did not vouch for anything. Prof. Dixon's assumed identification of plums, cinnamon, etc., with American plants is taken bodily out of Baxter,¹ but both are thoroughly mistaken. Prunes, figs, almonds, nuts, etc., were carried by all the voyagers in their ships, and Indians constantly received these fruits from the Europeans. Indeed, we hear of these from the very earliest times after the discovery. In 1494 ships carried almonds and olives to America,² and it will be observed that all MSS. of Cartier give an Indian name for "olives," namely *houocohonda*.³ In 1500 Alvares Cabral gave the Brazilian Indians some dried figs.⁴ Prunes are constantly mentioned in the *Jesuit Relations* as an Indian food, and more than once the specific statement is made that French prunes are meant: "Besides, they get from our French People galette, or sea biscuit, bread, prunes, peas, roots, figs, and the like. You have here the food of these poor people" (1634).⁵ This proves conclusively that Cartier had chiefly in mind imported articles of food. Prof. Dixon identifies "almonds" with "several varieties of nuts"; but in Cartier "almonds" is immediately followed by "nuts," which makes the identification impossible.

Prof. Dixon says (p. 182):

There remain the "cloves" and "cinnamon." In regard to the former, it is to be noted that they are referred to in two of the three manuscripts as "so-called cloves," obviously indicating that they resembled but were not true cloves.

The sentence before the "cloves" reads: "Note that their lord named Donnacona has been to a land where they are, a moon going with their boats from Canada to the said land, in which there grows much cinnamon and cloves."⁶ This is followed in two manuscripts by "ladicte

¹ *Op. cit.*, p. 111.

² M. F. de Navarrete, *Coleccion de los viages y descubrimientos*, Madrid, 1825, vol. II, p. 151.

³ Baxter, *op. cit.*, p. 212.

⁴ *Alguns documentos do arquivo nacional da Torre do Tombo*, Lisbon, 1892, p. 110.

⁵ Vol. VI, p. 273.

⁶ Baxter, *op. cit.*, p. 214 f.

canelle," which Baxter blunderingly translates by "they call *the said cloves* adhotathny," while Prof. Dixon perpetuates Baxter's blunder, by translating *canelle* as "cloves," and in addition gives to Fr. *ladicte* a meaning which it does not possess, in order to make a point against me.

Prof. Dixon says (p. 182):

The theory that the Iroquoian tribes north of the St. Lawrence were, in the early sixteenth century, in direct trade relations with the Gulf of Mexico could, quite apart from its inherent improbability on account of the distances involved, only be imagined by one quite unaware of the character of Indian trade and of the political conditions among the eastern tribes at this time.

Yet Baxter, whom Prof. Dixon quotes *in toto*, in order to prove Prof. Dixon's assumed identification of plants, has the very opposite opinion. Cartier says (p. 189 f.):

Moreover, they have given us to understand that at the place where we had left our boats when we went to Hochelaga there is a stream that goes toward the southwest, where, likewise, it takes a moon to go from St. Croix with boats as far as to a land where there is never ice nor snow; but that in this said land there are continual wars one with another, and that in this land there are oranges, almonds, nuts, plums, and other sorts of fruits, and in great abundance. And it was told us that the men and residents of the land were clad and arrayed with skins as themselves. After having asked them if there was any gold and copper there, they answered us no. I esteem the said place to be, by their saying, toward Florida by what they showed us by their signs and tokens.

To this Baxter aptly adds the note:

In spite of continual warfare among the different savage tribes, there were many ways by which they could obtain a knowledge of the inhabitants and products of distant regions. Cartier was evidently right in his conjecture that the country described was "toward Florida." It is quite possible that the natives of Canada had intercourse at times, either directly or indirectly, by the great waterways toward the southwest, with the tribes in that direction.

Prof. Dixon can get his information only from the sources from which I get mine, namely from the writers of the sixteenth century, and they unanimously contradict him. The trader and medicine man was exempt from the feud, and traveled unmolested over enormous distances. Cabeça de Vaca wrote:

I put myself to contriving how I might get over to the other Indians, among whom matters turned somewhat more favorably for me. I set to trafficking, and strove to make my employment profitable in the ways I could best contrive, and by that means I got food and good treatment. The Indians would beg me to go from one quarter to another for things of which they have need; for in consequence of

incessant hostilities, they cannot traverse the country, nor make many exchanges. With my merchandise and trade I went into the interior as far as I pleased, and traveled along the coast forty or fifty leagues. The principal wares were cones and other pieces of sea-snail, conches used for cutting, and fruit like a bean of the highest value among them, which they use as a medicine and employ in their dances and festivities. Among other matters were sea-beads. Such were what I carried into the interior; and in barter I got and brought back skins, ochre with which they rub and color the face, hard canes of which to make arrows, sinews, cement and flint for the heads, and tassels of the hair of deer that by dyeing they make red. This occupation suited me well; for the travel allowed me liberty to go where I wished, I was not obliged to work, and was not a slave. Wherever I went I received fair treatment, and the Indians gave me to eat out of regard to my commodities. My leading object, while journeying in this business, was to find out the way by which I should go forward, and I became well known. The inhabitants were pleased when they saw me, and I had brought them what they wanted; and those who did not know me sought and desired the acquaintance, for my reputation.¹

And how is it improbable that the Iroquoians were in direct trade relations with the Gulf of Mexico, when Cartier distinctly says so, and Sagard a hundred years later repeats the assertion? As to the distances involved, we have a very detailed itinerary for the Indians in the *Jesuit Relations*,² from which we learn that they went in their canoes on long voyages, 600 miles at a time, and averaged as high as 60 miles a day and more, going down stream. In a moon's time, going down the Mississippi and its tributaries, the Indians could make 1800 miles, or considerably more than the distance from the Huron country to the Gulf. In a moon and a half, as given by Sagard, they could have gone to any place, as far as the present state of Florida.

Says Dixon (p. 182):

On page 145 ff. it is contended that the carriers of this trade in tobacco and tropical fruits were the Algonkian people called by Sagard (and by him alone) the Epicerinys, whose name is derived by Professor Wiener with all apparent seriousness from the French 'épicerie' (spices). It is hardly necessary to point out that these "bringers of spices" are the Nipissirini or Nipissings of the lake of that name in northern Ontario.

What I said is this: "It will be observed that the people who told Sagard about this are called Epicerinys, *apparently* from the French *épicerie* 'spices,' that is, 'the people who bring the spices.'" There can be little doubt that Sagard connected the Nipissings with traders

¹ Buckingham Smith, *Relation of Alvar Nuñez Cabeça de Vaca*, New York, 1871, p. 85 f.

²Vol. XLIV, p. 237 ff.

of the Sea of Spices, hence he changed *Nipisserini* to *Bisserins*, *Epicerinys*. It must be kept in mind that a large number of Indian names were by popular etymology transformed into French words. Just as the *Hurons* were made to appear as the French *hurons* "tousle-heads," although derived from the Iroquoian *hronon* "man," a word with which many names of nations end in Iroquoian, so *Epiceriny*, "apparently from *épicerie*," is in reality based on some other word. But Prof. Dixon's derivation of *Nipissings* from "Lake Nipissing" is as correct as would be the derivation of *Huron* from "Lake Huron." The Hurons called the *Nipissings* *Skekwanenhronon* "Sorcerers," and the French, too, called them "Sorcerers." This makes it certain that their Algonkian name was *Nipikiwinen* "sorcerers," from which developed *Nipissirinen*, etc. But what in the world did the *Nipissings* have to do with my statement? I showed that for one hundred years the Hurons, or some people among them, traded with a people on the Gulf. Cartier told this of Donnacona, Sagard of the *Epicerinys*. Without committing myself to their identification, I merely showed that the traders were "the spicerers" of the north, and "spicerer" in the Middle Ages meant "dealer in imported fruits, etc."¹ The matter is not in the least changed, if the popular etymology is wrongly taken; hence I added the word "apparently."

To continue with Prof. Dixon's criticism (p. 183):

Space is lacking to point out all the vagaries which fill the pages of this extraordinary chapter. These range from misstatements, such as when (p. 189) it is said that Alarcon in 1540 described Indians of the Northwest (sic) as "addicted to smoking, carrying the tobacco and the pipe in a bag tied to their arms, to the quite incomprehensible attempt to make the Mexican 'chapopotli' (which was by the author's own statements, a bituminous, reddish-purple, aromatic material mixed with other substances in the filling of cigarettes) equivalent to meerschaum."

From here on Prof. Dixon's crabbed pronunciamientos make it hard to ascertain what his censure is. I shall try, however, to answer the vague charges as far as I can make them out. As to the Northwest, a little imagination will show that my geographical terms are those of the period to which I refer. When I speak of Florida, I mean the territory north of the Gulf of Mexico up to the fortieth degree of latitude. Similarly, the Pacific region north of Mexico is the Northwest of the sixteenth century. I had to choose some such expression, in order to include both Alarcon, who went up the Colorado River, and Drake,

¹ See my Economic History and Philology, in *Quarterly Journal of Economics*, vol. xxv (1910), p. 275 ff.

who went up to latitude 38°, as well as Fletcher, who speaks of latitude 48°. I specifically pointed this out in the concluding sentence, "that *tabaco*, first mentioned in Hispaniola, should have found its way so far to the northwest, in addition to the rest of the continent, is a *prima facie* proof that the distribution of *tobacco* follows from its first appearance under Arabic influence, from Guinea to all countries where Spanish, Portuguese, and French sailors navigated via Guinea or after having taken part in Guinea expeditions" (p. 141). Prof. Dixon makes me say that Alarcon spoke of tobacco. On p. 141 I said, "It is not certain that Alarcon here described the tobacco." On p. 189 I made the concession to Prof. Dixon's school that it was tobacco, even as it is mentioned in the margin in Hakluyt. Although I counseled caution, I am now inclined to believe that that was exactly what Alarcon meant, because the early expression for "smoking" was "to drink tobacco," as it still is in Arabic and other languages. Besides, we have an almost contemporary reference in Spanish to "drinking of tobacco." Herrera gives, under the date of 1550: "Tambien usan mucho del Tabaco, para Reumas, Corrimientos, i dolores de Cabeça, i lo toman molido en polvo, por las Narices, i beben el çumo, i los hace purgar, i tambien lo usan los Castellanos." Tobacco was taken as snuff, through the nose, and the juice was drunk, as the Spaniards do, that is, it was smoked. If it was drunk, it was still tobacco that was drunk.

The modern meerschaum dates from the eighteenth century, and the misnomer "sea-foam," since it is mined and not found in the sea, has been a puzzle to philologists. Sahagun and Belon, however, help us over the difficulty. The modern meerschaum is merely a substitution of the real *meer-schaum*, the old German name of the *alcyonium durum*, a pitchy, pumice-like substance of the sea, which was used in the manufacture of aromatic tobacco pipes (*cf.* my book, p. 148 f.). The confusion with the pissasphaltum of the ancients was due to Sahagun's following explicitly Belon's explanation. The modern meerschaum obviously came into use because of its property to discolor beautifully, exactly as Sahagun's chapopotli and Belon's pissasphaltum did, and this is the only justification for its absurd name. Had I been writing a disquisition on *meerschaum* and not on tobacco, I should have made the matter clearer, but all I wanted was to show the important fact that Sahagun got his description, not from an Aztec source, but from Belon.

My critic speaks of

the credulity which accepts without question Squier's identification of "manatee" and "toucan" pipes in the Ohio mounds (p. 168) to the assurance which, in utter

disregard of all archaeological data, declares the pottery heads of San Juan Teotihuacan "negroid" and hence post-Columbian.

No doubt, Prof. Dixon has in mind H. W. Henshaw's censures of Squier and Davis in his *Animal Carvings from Mounds of the Mississippi Valley*,¹ but even he did not speak so disparagingly of Squier. Besides, Henshaw's conclusion,

that a large majority of the carvings, instead of being, as assumed, exact likenesses from nature, possess in reality only the most general resemblance to the birds and animals of the region which they were doubtless intended to represent,²

leaves the subject wide open, and, in spite of occasional errors in Squier and Davis it is much safer to accept their verdict, than Henshaw's. As to the post-Columbian origin of the negroid pottery head, there is not a word about it in my book. I only quoted Charnay, who said that he picked up a Negro head, and that the *ruins were still in use in Spanish times*.

The other censures by Prof. Dixon are too vague to be aswered here. They will be properly illustrated in my future works.

LEO WIENER

A REJOINDER

THE Editor has kindly given me the opportunity to add a few words in the way of rejoinder to Professor Wiener's lengthy criticism of my recent review of his book. Ordinarily I should be quite content to leave the verdict as to the value of the book, the validity of my criticisms, and the adequacy of Professor Wiener's reply to any anthropologists who cared to waste their time over the task. But (and I regret to be obliged to speak thus plainly) the disingenuousness of Professor Wiener's criticisms and the fact that he has stooped to the employment both of *suggestio falsi* and *suppressio veri* practically force me to make a brief answer. I shall do this by the shortest possible comments on the more important points at issue.

1. Remora fishing:—On pages 61-67 of his book, Professor Wiener ridicules the whole idea of remora fishing, and attempts to prove the practice unknown in the West Indies and the accounts of it "lies." In his reply, he again obligingly refers to these accounts as "base lies." He refers to no purpose to eighteenth century descriptions of the practice on the East African Coast, but carefully omits any references to ac-

¹ In *Second Annual Report of the Bureau of American Ethnology*, 1880-81, p. 123 ff.

² *Ibid.*, p. 166.

counts of the use of the remora in Caribbean waters. The whole question has been exhaustively treated by Gudger (*American Naturalist*, LIII, pp. 289, 446, 515) to whose paper those interested may be sent.

2. Earliest use of tobacco in Africa:—My statement was that the earliest *certain* record given was toward the end of the sixteenth century. In his reply, Professor Wiener has only succeeded in making it more deadly clear that my statement was quite correct!

3. Tobacco native in Africa:—Welwitsch does indeed, as Professor Wiener states, record *Nicotiana tabacum* as "wild" at one station, but Professor Wiener does *not* state two facts of vital importance in estimating the value of Welwitsch's evidence for this species of tobacco being *native* in Africa. These are: (1) that the station referred to is but a short distance from São Paulo de Loanda, the capital of Angola, a town which has been in existence since the latter part of the sixteenth century, and (2) that Welwitsch also gives a *second* station in the same area, with the entry "cultivated and afterwards sporadically and rather rarely half-wild." The mere fact that a plant is found growing "wild" is not, as any botanist knows, evidence that it is *native* in the region. As tobacco is a plant that somewhat easily escapes from cultivation and naturalizes itself, no competent botanist would, I think, accept Welwitsch's *two* statements, as in any sense proof that *Nicotiana tabacum* was *native* in an area where it has been cultivated for several centuries.

As to Schweinfurth, Professor Wiener is obliged to admit that his reference made no mention of the subject. I was quite well aware of the statements elsewhere in the book, but I did not and do not regard "open questions" and "tenable conjectures" as constituting valid evidence, particularly when these "conjectures" go counter to the currently received scientific opinion.

4. Bernal Diaz and Sahagun:—I still believe Professor Wiener "minimizes" the evidence of Bernal Diaz which he gives—and he does not give it *all*! The interpretation of Grijalva's account (which seems previously to have escaped Professor Wiener's attention) does not seem to me to be defensible. Professor Wiener wisely omits to quote the passage from Sahagun which I said he had misunderstood and mistranslated. The French text, speaking of the making of reed cigarettes (not "pipes" as Professor Wiener translates it) reads "il pulvriser ensuite très finement le charbon qu'il mouille et dont il bourre les roseaux." This is rendered (p. 148 of Professor Wiener's book), "Then he carefully pulverizes some *coal*, which he dampens *in order to bore with it through the reeds*" (italics mine). Let any French scholar show that this is

not a hopeless misunderstanding and egregious mistranslation of the original. The reeds were filled or stuffed with dampened charcoal, not "bored" with "coal."

5. Inhaling cohoba:—An excellent example of disingenuous method. Professor Wiener artfully quotes a sentence of his from page 113 of his book, *without its context* which completely modifies its meaning, and then asks in injured innocence if "this is a denial *in toto*." Of course it is not—but the whole of the nine pages which precede are given up to nothing but an elaborate denial of the use of cohoba and the bifurcated snuffing-tube, and an attempt to prove both Columbus' and Ramon Pane's accounts of these to be pure lies! He then quotes Safford, cleverly but quite falsely suggesting that this quotation sums up Safford's views on the *whole question*—but very carefully omits any reference to the succeeding thirteen pages, in which Safford demonstrates the wide extension of both practices and their use in prehistoric times.

6. Bitumen:—Comment, even on Professor Wiener's comment, again "seems superfluous."

7. Cartier:—Fr. *prune* = plum; Fr. *pruneau* = prune. This is an old catch for beginners in French. If Professor Wiener can refer me to "any dictionary" which gives both meanings as in good use for Fr. *prune*, I shall be very grateful. In speaking of the misprint of *pommes* for *prunes* I was referring to the specific case of its appearance in the vocabulary. That the word for apple (a native fruit) occurs *elsewhere* in Cartier's text has no bearing whatever on the question. I cannot take the space necessary for an adequate discussion of the other points raised.

8. Epicerinys:—I would only point out that I never dreamed of deriving "*Nipissing*" from "Lake Nipissing." I merely stated the fact that the tribe called *Nipissirini* in the seventeenth century are today called *Nipissings* and that they lived near a lake which bears their name. I am quite content to leave Professor Wiener's derivation from the Fr. *épicerie* to the tender mercies of other philologists!

9. Alarcon:—The "misstatement" lies in the fact that Alarcon does not mention either tobacco or pipes. Although fifty pages or so earlier, Professor Wiener admits that it is a pure assumption that tobacco was meant and could adduce no evidence whatever in regard to pipes, yet, on the page referred to (p. 189) he states both assumptions as *facts* without qualification, in order to bolster up his theory.

10. Chapopotli:—There is not space here to discuss the complete muddle into which Professor Wiener has fallen in this matter. Anyone who cares to read pp. 148-149, 181-184 of his book, can convince himself of this.

11. Ohio Effigy-pipes:—Professor Wiener here again employs both *suppressio veri* and *suggestio falsi* with a master hand. The question at issue is whether or not certain pipes found in Ohio represent the manatee and the toucan, animals and birds whose nearest habitat was in the Gulf of Mexico and the regions south. In order to give the impression that Henshaw's criticisms do not invalidate but rather confirm the accuracy of Squier and Davis' identification, Professor Wiener carefully quotes Henshaw's *second* conclusion, and then states that the latter thus "leaves the subject wide open." He deliberately *omits*, however, to give Henshaw's *first* conclusion which immediately precedes and which reads "that of the carvings from the mounds which can be identified there are no representatives of birds or animals not indigenous to the Mississippi Valley." In the body of his article, Henshaw has just shown conclusively that Squier and Davis' identifications of "manatee" and "toucan" pipes are absolutely untenable!

12. Teotihuacan "negroid" heads:—The word "post-Columbian" is to be sure not used in connection with these heads—but the entire paragraph in which they are mentioned, has for its primary purpose to suggest that the heads are "negroid" because they were made subsequent to the introduction of Negro slaves.

Professor Wiener's reply constitutes neither fair criticism nor legitimate argument; it is rather an evasion of the issues and a specious presentation of irrelevant or misleading facts.

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THE REINDEER

My "Notes on Reindeer Nomadism" (*Memoirs of the American Anthropological Association*, Vol. VI, 2) has called forth a reply from Dr. Laufer in the *Anthropologist's* April-June number, 1920, which has just come to hand.

I am heartily in accord with Dr. Laufer when he says "that facts mean everything." Facts should, however, be rightly understood; therefore, we must attempt to find out the right order in which the facts should be arranged so as to be fully comprehended. That is where theory comes in. Now, Eduard Hahn and after him Dr. Laufer have not, in my opinion, arranged the facts in the right order; therefore, I have tried to arrange them better. From Dr. Laufer's reply I learn of his disapproval of my analysis of reindeer nomadism and my attempt at a chronological stratification of the elements contained in this culture-

form. "The criteria made out for earlier and later phenomena are purely subjective and a matter of debatable opinion." Unfortunately, Dr. Laufer does not say why he regards my criteria as purely subjective. It would have been interesting to know why Dr. Laufer regards the geographical distribution of the elements of reindeer nomadism as purely subjective. The fact that he finds my work deserving of condemnation is not sufficient basis for a discussion.

When I find reason to suppose that Ørjan Olsen may have made a mistake regarding the taming of wild reindeer among the Soyot, I am not moved by any fear of having my theories contradicted or my "dreams" shattered. If Olsen's observations should happen to be perfectly correct, this would not seriously impair any of my theories. I find, however, that the process of taming, described by Olsen, has a suspicious similarity to the breaking of domesticated (not wild) reindeer among the Lapp; and it seems to me very curious that the Soyot should carry on a regular domestication of wild reindeer, as long as no such procedure is known from other reindeer tribes.

On a number of points I have criticised Dr. Laufer's paper, "The reindeer and its domestication." Some of these points he passes by in silence in his reply—e.g., my criticism of his note on the Lappish and Samoyed sledges. Other points he takes up for discussion. With regard to Dr. Laufer's statement that "reindeer milk is not made into any product in northern Asia," I cited two instances to the contrary; Dr. Laufer declares that does not alter his views. That may be. More serious is his maintenance of his remarkable interpretation of Othere's account. Dr. Laufer declares that he does not read more into documents than is warranted by their contents. However, he not only refuses to accept the interpretation which our best authorities so far have given of Othere's reindeer account; he actually reads into this account something which it does not contain, and which is moreover in perfect discord with what we know of the culture of the old Norsemen and of the habits of the reindeer of the region where Othere lived. Othere's account does not state that his reindeer were "the venture of a sportsman, who had an aesthetic pleasure in the animals, like a park-owner in fallow deer"; in this interpretation, Dr. Laufer goes entirely beyond the content of our document. Furthermore, the saga-literature, which tells us a great deal about the life and culture of the old Northmen, although not much about those of other nations, does not contain anything about deer-parks (one of our best authorities on the culture of the saga-period, Professor Valtyr Gudmundsson of the University of Copenhagen, has

verified that). And, what is also a serious objection to Laufer's interpretation, the reindeer of the region are strictly migratory. Dr. Laufer finds these two objections not valid; it seems to me—and to other students of Lappish ethnology—that they have considerable force. The refusal of Dr. Laufer to take account of them cannot be given much importance as long as he has not produced a single piece of evidence in behalf of his theory about Othere's supposed deer-park.

I am glad to learn that Dr. Laufer entertains no doubt as to the nationality of Othere's Finn. Page 95 of his paper gave me the impression that he was in doubt. Now, as Finn in Othere's narrative means Lapp, we learn from Othere that the Lapp in Othere's country in the ninth century caught wild reindeer by means of decoy deer—that is, they used tame reindeer in hunting, probably by the same hunting methods as those which were fully described by later authors on Lapland, which have been in use by reindeer nomads all over northern Eurasia. Othere does not say that he himself used his six decoy deer in hunting. He says, however, that he owned altogether a herd of six hundred tame deer. As Scandinavians are not known to have been reindeer breeders, except in a sort of cooperation with the nomadic Lapp who tended the reindeer of Scandinavian owners together with their own herds, and as Othere mentions the Lapp and their use of decoy deer at the same time as he speaks about his herd of six hundred, the inference can hardly be avoided that Othere, the Lapp, and the reindeer had something to do with each other, probably in much the same way as Scandinavian reindeer owners, nomadic Lapp, and reindeer in later centuries. If we are to understand Othere's reindeer account at all, we must read it in this way. Dr. Laufer's interpretation, on the other hand, is fanciful, as it does not agree with Othere's account, nor accord with other facts about Scandinavians and reindeer.

As I have shown (p. 125), an Icelandic poem, probably from the thirteenth century, mentions a Lapp chieftain, riding in a reindeer sledge. Dr. Laufer does not seem to have noticed that. On the other hand, he informs me of the undeniable truth, that Saxo's tale about Hotherus is legendary. I have, of course, not thought of doubting that; when I mentioned Saxo's tale, it was because an eminent folklorist has compared a passage in this tale with the reindeer-driving Lapp chieftain in the Icelandic saga and poem. As I have stated several times, we do not learn much about other nations in the sagas. I find it, however, natural to adduce what the sagas have to say on Lapp and reindeer.

Dr. Laufer's sweeping assertion, that "no historical facts should be

deduced from the status of loan-words and other linguistic phenomena" is an attack on the eminent philologists who have deduced historical and culture-historical facts from loan-words and other linguistic phenomena in Lappish and neighboring languages, and does really not concern me, as I am not a philologist nor am I claiming to be one. I have cited the opinion of recognized philologists upon Lappish reindeer nomadism, because I found it desirable to call attention to as much material as possible, bearing upon this problem. I would advise Dr. Laufer to study the particular works in question before passing his sentence. Comparative philologists have probably made many mistakes, especially in their attempts at reconstructing the original "Indogermanic" culture. I fear, however, that by condemning indiscriminately all philologic attempts at deducing culture-historical facts from linguistic phenomena, Dr. Laufer may perhaps strike at more heads than he can easily cut off.

Now we arrive at Kalevala. Unfortunately, Dr. Laufer revealed in his paper a fatal lack of understanding of the real culture-historical import of this remarkable epic. It was necessary, therefore, to state shortly what Kalevala is, according to modern folklore. It is not at all my own ideas I have set forth about Kalevala; I may, therefore, justly disclaim the honour of being ridiculed by Dr. Laufer as a self-constituted Kalevala authority. I would, however, advise Dr. Laufer to read his classics, and some modern authors too, a little more carefully, before he takes his final stand in the question of Kalevala's bearing upon reindeer nomadism.

When I maintain that the description of Lapland and the Lapps in Kalevala is not realism, I do not assert, of course, that Kalevala does not contain any glimmering of truth about the Lapps. It is, however, on the whole a distorted, fanciful, imperfect, unrealistic picture of Lappish culture that can be gained from Kalevala. Laufer cites a number of verses in which snowshoes, reindeer-hunting, and sledges drawn by horses are mentioned. I do not quite understand why he does that. Is he not aware that horse driving is a Finnish trait and never was a Lappish one, and that snowshoeing and elk and reindeer hunting are old Finnish sports?

Dr. Laufer has the audacity to assert, "Had it so happened that the Kalevala furnishes the opposite data which would support Hatt's presumptions, he would probably have accepted them without hesitation." This is glaring unfairness. If Dr. Laufer has read my paper through, he cannot have avoided noticing (p. 127) that I have cited a passage from Kalevala where the reindeer actually is mentioned as the

northern or Lappish equivalent of the horse. As I have said already in my paper, I do not quote this passage as proof of the antiquity of reindeer nomadism—which would, in my opinion, be entirely inappropriate—but solely to show that Dr. Laufer has not read Kalevala carefully enough. I confess that his reiterated assertion that Kalevala “does not contain the faintest allusion to domesticated reindeer,” is evidence of a steadfast mind.

The value of a discussion depends upon the validity of the arguments which are set forth, a validity notably lacking in Dr. Laufer's recent criticism.

GUDMUND HATT.

COPENHAGEN,

October 16, 1920.

WHO WERE THE PADOUCA?

Dr. Grinnell, *American Anthropologist*, Vol. 22 (N.S.), p.248 *et seq.* discusses the question as to who the Padouca were, and states (p. 260) that “the evidence . . . convinces me that the Padouca were not the Comanche, and I am disposed to regard them as Apache.” Without wishing to review his entire article, I may point out that the Foxes call the Comanche and no other people Pātō'kā'a: see William Jones, *Fox Texts* [1907], p. 216; and this is substantiated by my own information. It is obvious that this has an important bearing on who the Padouca were.¹

TRUMAN MICHELSON.

BUREAU OF AMERICAN ETHNOLOGY,
WASHINGTON, D. C.

¹ Naturally Pātō'kā'a is not in the synonymy under the article Comanche, Handbook of American Indians, but Dr. Grinnell has apparently ignored the fact that other living Indian tribes also know the Comanche by equivalents of “Padouca”: see the synonymy under the article Comanche in the said Handbook.

ANTHROPOLOGY AT THE PHILADELPHIA MEETING AND PROCEEDINGS OF THE AMERICAN ANTHRO- POLOGICAL ASSOCIATION

The American Anthropological Association held its nineteenth annual meeting at the Houston Club, University of Pennsylvania, Philadelphia, December 27 and 28, 1920.

Three meetings of the Council were held at two of which President Wissler was in the Chair. Vice-President Swanton presided at the last meeting of the Council.

COUNCIL MEETING, DECEMBER 27, 9:45 A.M.

The following reports were read and accepted:

REPORT OF THE SECRETARY

The proceedings of the last annual meeting of the American Anthropological Association were published in the *American Anthropologist* for January-March, 1920. There has been no special meeting of the Association nor of the Council during the year.

The Executive Committee had numerous matters brought to its attention during the year. These were as follows:

- Feb. 16. In response to a circular letter of Feb. 16, the Committee voted unanimously to accept the invitation to meet in Chicago in December.
- Mar. 1. The majority of the Committee voted to recommend to the National Research Council Mr. F. W. Hodge to fill out the unexpired term of Dr. Franz Boas which extended to July 1, 1920.
- Apr. 17. F. W. Hodge and Clark Wissler, nominated by the Council of the A.A.A. in December, 1919, were elected by the National Research Council to serve a three year period beginning July 1, 1920.
- Sept. 22. In response to a circular letter of Sept 22, the committee voted to discontinue the publication of the *Memoirs*. The sentiment of the Committee was against further reduction in the size of the *Anthropologist*.

- Nov. 18. As the result of a petition, the Committee was asked to reconsider its decision of Feb. 16 as to the place of the next meeting.
- Nov. 24. The Committee was asked to vote on Baltimore and Philadelphia as the place for the coming meeting.
- Dec. 2. The Secretary was informed by the President that the majority of the Committee had voted to accept the invitation of the University of Pennsylvania and meet in Philadelphia.

The anthropological membership of the Division in the National Research Council is now as follows:

To serve until July 1, 1921: J. W. Fewkes, B. Laufer, P. E. Goddard.¹

To serve until July 1, 1922: R. B. Dixon, A. L. Kroeber, A. M. Tozzer.¹

To serve until July 1, 1923: Clark Wissler, F. W. Hodge, J. H. Breasted.¹

Members of the Executive Committee: R. B. Dixon, J. W. Fewkes.

The President appointed during the year the following members to serve as a Committee on the Prehistoric Foundation in France: Charles Peabody (Chairman), G. G. MacCurdy, N. C. Nelson.

The Association has lost by death during the year four members: Professor William Churchill, Professor S. A. Lafone Quevedo, Dr. W. H. Furness, 3d., and Dr. James M. Flint.

Fifteen members have resigned, five have been dropped, and 41 new names have been added to the list of members, making a net gain of fifteen. The membership at present is as follows:

Honorary members.....	5
Life members.....	13
Regular members.....	499
Total.....	517

Respectfully submitted,

ALFRED M. TOZZER,
Secretary.

¹ Elected by National Research Council.

REPORT OF THE TREASURER

Receipts

Balance on hand, January 1, 1920.....		\$ 319.30
Anthropological Society of Washington.....	\$ 247.45	
American Ethnological Society.....	375.00	
Annual Membership Dues:		
1918.....	\$ 27.00	
1919.....	174.01	
1920.....	1,785.90	
1921.....	838.28	\$2,825.19
Sale of Publications.....	391.61	
Rehabilitation Fund.....	100.00	
Reimbursements.....	130.40	
Interest.....	9.56	
Miscellaneous.....	1.60	\$4,080.81
Total Receipts.....		<u>\$4,400.11</u>

Disbursements

New Era Printing Company.....	\$3,269.57	
Beck Engraving Company.....	77.27	
Treasurer-Editor's and Secretary's Expenses.....	470.98	
Miscellaneous.....	16.60	
Total Disbursements.....	3,834.42	
Cash on hand.....	565.69	
	<u>\$4,400.11</u>	<u>\$4,400.11</u>

Resources

Cash on hand, December 20, 1920.....		\$ 565.69
Due from engravings.....	\$ 6.84	
Due from sales:		
1919.....	\$ 5.50	
1920.....	151.72	157.22
Due from dues:		
1918.....	\$ 24.00	
1919.....	48.00	
1920.....	182.00	254.00
Total Resources.....		<u>\$ 983.75</u>

Liabilities

Membership dues from 1921 already paid.....	\$ 838.28	
Total Liabilities.....	837.28	
Net excess of Resources over Liabilities.....	145.47	
	<u>\$ 983.75</u>	<u>\$ 983.75</u>

*Cost of Publications**American Anthropologist*, vol. 21, no. 4:

Engravings.....	\$	6.70		
Printing.....		461.24	\$ 467.94	\$ 467.94.

American Anthropologist, vol. 22, no. 1:

Engravings.....	\$	3.68		
Printing.....		468.46	\$ 472.14	
Reimbursements.....			3.68	\$ 468.46

American Anthropologist, vol. 22, no. 2:

Engravings.....	\$	25.87		
Printing.....		390.42	\$ 416.29	
Reimbursements.....			19.03	\$ 397.26

American Anthropologist, vol. 22, no. 3:

Engravings.....	\$	21.13		
Printing.....		464.94	\$ 486.07	
Reimbursements.....			21.13	\$ 464.94
Net Cost.....				<u>\$1,798.60</u>

Memoirs, vol. 6, no. 3:

Printing.....	\$	398.09	\$ 398.09	
Reimbursements.....			71.56	\$ 326.53

Memoirs, vol. 6, no. 4:

Printing.....	\$	289.65	\$ 289.65	\$ 289.65
Net Cost.....				<u>\$ 616.18</u>

American Anthropologist, net cost.....\$1,798.60*Memoirs*, net cost.....616.18 \$2,414.78

Reprints and Distribution (<i>American Anthropologist</i> and <i>Memoirs</i>).....	242.04			
Total Cost.....			<u>\$2,656.82</u>	

PERMANENT FUND

Receipts

Balance, January 1, 1920.....			\$1,313.62	
Interest, May 17, 1920.....	\$	4.24		
Interest, December 7, 1920.....		4.26		8.50
Total Receipts.....				<u>\$1,322.12</u>

Investments

Liberty Bonds, June 11, 1919.....	\$	190.90		
W. S. S., June 11, 1919.....		16.68		
W. S. S., October 21, 1919.....		4.21		
W. S. S., May 17, 1920.....		4.16		
W. S. S., December 13, 1920.....		4.23	\$ 220.18	
Cash in envelope.....				1.94
Loan to General Fund.....				1,100.00
Total Investments.....				<u>\$1,322.12</u>

The accounts of the Treasurer, P. E. Goddard, have been examined and found correct.

M. H. SAVILLE,
R. H. LOWIE,
Auditing Committee.

The income of the Association has increased slightly this year over the preceding years. At the last annual meeting the charge for publications furnished to the Ethnological Society and the Washington Society was increased from \$3.50 to \$4.00 per volume. The total amount of the dues for 1920 is \$2,207.70 of which \$339.88 was received in 1919 and \$182.00 remains to be collected. The total for 1919 is \$2,200.88 of which \$48 is still uncollected. The sales have been unusually large, \$543.33 as against \$211.27 for 1919. This is a result of an increasing demand by libraries for a complete set of the *American Anthropologist* to meet the requirements of their patrons, which it is hoped will be permanent, and in part to a recovery from the war, which is temporary. The sum of \$100.00 has been added to the Rehabilitation Fund by spontaneous donations.

In May, word was received from our printers that there would be a further increase of about 25 per cent. in the manufacturing expense. By reducing the number of pages from 500 to 400 it has been possible to keep within the budget of \$2,000.00 for the *American Anthropologist*. The amount paid for printing four numbers is \$1,798.60. The reprints and postage bill of the New Era Printing Co. covering both the two numbers of the *Memoirs* and the four numbers of the *Anthropologist* is \$242.04 which when added to the cost of printing amounts to \$2040.64.

The allowance for office expenses was \$500 of which \$470.98 has been used.

There has been sufficient income to pay for the two numbers of the *Memoirs* for 1919 amounting to \$616.18.

For the first time in years our bills are all paid and we have a balance in the bank of \$565.69. The statement of resources and liabilities shows an improvement in our condition of \$150.82.

Respectfully submitted,

P. E. GODDARD,
Treasurer.

REPORT OF THE EDITOR

Owing to an advance in the cost of printing, the *American Anthropologist* was reduced from the intended 500 pages to 400. The volume con-

tains articles of both general and special interest. As examples of the former may be mentioned the address by President Wissler on "Opportunities for Coordination in Anthropological and Psychological Research" and one by Prof. Boas entitled "The Methods of Ethnology." Such articles mark for ourselves, and others who may be interested, the progress made in recent anthropological thinking. Among the articles of less general interest should be noted one by Dr. Gamio printed in Spanish on "Las Excavaciones del Pedregal de San Angel y la Cultura Arcaica del Valle de Mexico."

The review section has been conducted by Dr. Lowie, Associate Editor. These reviews, as in past years, serve as a ready source of information as to current anthropological writings and as a convenient means for comment on the methods and principles involved. In the opinion of the Editor, the department of Discussion and Correspondence also furnishes a much needed opportunity for a free expression of opinion in regard to newly discovered facts, current theories, and general criticism of recent publications.

There is manifest a growing interest in anthropology, both on the part of educational institutions and the reading public. An increase in the circulation of the journal amounting to 25 or 50 per cent. would produce revenue sufficient for comfortable and ample publication.

Respectfully submitted,

P. E. GODDARD,

Editor.

The Treasurer moved the following recommendation for the budget for 1921, which was adopted:

For manufacturing and distributing the American Anthropologist and authors' reprints.	\$2,500.00
For providing engravings in special cases.	150.00
For the expenses of the Editor, Treasurer, and Secretary.	550.00
Total.	\$3,200.00

The resignation of the Secretary was accepted with regret and a vote of thanks was passed.

Thirty-seven members were elected. Their names are as follows:

Julius Springer
W. Leon Godshall
E. R. Groves
C. Harris
Dr. J. H. Kellogg

Prof. Campbell Bonner
G. E. Nitzsche
P. J. Patterson
Prof. E. L. Patton
Dr. E. B. Renaud

Margaret J. McCoy	P. Sherwin
F. C. Meredith	Sir Nil Ratan Sircar
Otto Müller	Tioga Point Museum
New School for Social Research	U. S. Public Health Service
R. F. Warren	University of Denver
Dr. Spencer Trotter	Whitcombe and Lombs
W. H. Over	University of Bristol
W. J. Wintemberg	University of Otago
Dr. Aristides Mestre	D. Jenness
Union Medical College Library,	Prof. C. S. Brown
Pekin	Minna B. Fensin
P. F. Scott	L. S. Shotridge
Sociedad científica "Antonio	C. E. Story
Alzate"	R. J. Weidlauer
Dr. N. Utsurikawa	Frank Wood

It was moved and passed that the communication of Arthur MacDonald be laid upon the table.

It was moved and passed that a set of the *American Anthropologist* be presented in the name of the Association to the Library of the University of Louvain.

The following reports were read and accepted:

REPORT OF THE CHAIRMAN OF THE JOINT COMMITTEE OF THE AMERICAN
ANTHROPOLOGICAL ASSOCIATION AND OF THE ARCHAEOLOGICAL
INSTITUTE OF AMERICA, DECEMBER, 1920

The enclosed report of the meeting of the Joint Committee in New York on April 22nd, 1920, prepared by the Secretary of the Committee, carries the history of the proposed American Foundation in France for Prehistoric Studies up to that time.

The Chairman of that Committee has the honor to report as follows:

The first year's budget of 21000 francs is guaranteed.

It is hoped that a few more subscriptions or guarantees may come in so that the individual subscriptions or guarantees need not be received or demanded in full; while the Foundation may never be self-supporting, it is a sign of financial health when a less sum is called for than is legally due.

A list of subscriptions and guarantees is appended to this report.

The Chairman is grateful to the individuals on that list and to others who have helped. Raising the money has not been an ungrateful task.

In July the Chairman went abroad and returned in December, 1920;

much of that time was spent in securing the good will of our French colleagues, without which the institution can not live, and without the securing of which the Chairman was unwilling to continue efforts in behalf of it.

Most of the leading anthropologists of France were made acquainted with the project, through being presented with an identical "Projet de Fondation."

No opposition was encountered.

Some suggestions were received, which the Director may, if he chooses, accept or modify.

In particular the cordial sympathy of the École d'Anthropologie de Paris, the Institut de Paléontologie Humaine, the Museum d'Histoire Naturelle and the great National Museum at Saint-Germain seems assured.

During an interview secured just before returning the Chairman was assured by the Director des Beaux Arts (under whose authority the excavations of the Foundation will come) that he was "d'accord" with our plans; a formal request for "Reconnaissance"—not to be confounded with "Reconnaissance d'Utilité Publique"—has been sent by Ambassador Wallace, with a cordial approbation of his own through the intermediary of M. George Leygues, President of the Council, to M. Paul Leon, Directeur des Beaux Arts; this will require possibly several months and a written answer; it is by no means necessary to wait for this before beginning work.

There are no legal interdictions on our plans; there are two laws, one of some years' standing and one passed a few months ago, which will place our exportation of specimens under a more or less official control; with tact, this will cause the Director no trouble.

The Chairman begs, therefore, that in accordance with the vote of April 22d, 1920, the Council will, at its earliest opportunity, appoint the three members of the Governing Board, and that it will recognize officially the existence of the American Foundation in France for Prehistoric Studies.

CHARLES PEABODY.

Chairman.

REPORT ON THE MEETING OF THE JOINT COMMITTEE

The Joint Committee on the proposed American Foundation in France for Prehistoric Studies met at the Hotel Plaza on April 22d, 1920.

Present: C. Peabody (Chairman), C. Wissler, G. H. Chase, N. C. Nelson, G. G. MacCurdy.

The Chairman explained the reasons for the calling of the Committee also stating that Dr. Henri Martin's Laboratory and the principal part of the station at La Quina are now the property of the French Government.

The Committee unanimously agreed that in order to insure the permanence of the Foundation the interest and aid of the French Government should be secured in addition to any promise of, or agreement with, Dr. Henri Martin; and that in the light of the records of other existing American schools of research in foreign lands, it would be highly desirable to found the one proposed in the field of prehistoric research.

It was voted to add to paragraph 4 of the chairman's synopsis the following: "Said specimens of human skeletal remains discovered by said Foundation and left in Charente, shall always be accessible to American students whether members of the Foundation or not."

The Committee recommends that a Governing Board of six be appointed by the Councils of the two constituent societies, three by each, and that this Board be empowered to appoint members at large not to exceed three.

This Governing Board shall appoint a Director of the Foundation annually. At the suggestion of the Chairman, the Committee voted that one of its number, Professor G. G. MacCurdy, be asked to serve as first Director for the proposed Foundation. It also moved that any members of the Committee who may be abroad this summer shall constitute a subcommittee with power to act.

It recommends that a Foundation Scholarship of 2000 francs be added to the proposed budget.

An affirmative vote was taken on the following recommendations:

1. That a letter of approval be secured from Dr. J. Walter Fewkes, Chief of the Bureau of American Ethnology.

2. That the cooperation be secured of M. J. J. Champenois, New York representative of the Office National Universités et des Écoles Françaises, and of Stephen P. Duggan, Chairman of the Committee on Fostering International Relations.

G. G. MACCURDY,

Secretary.

The President appointed the following nominating committee: R. B. Dixon, W. Hough, and R. H. Lowie.

The Council adjourned at 10:30 A.M.

COUNCIL MEETING, DECEMBER 27, 5 P.M.

The reports of the committees on the Cahokia Mound and on legislation in Maine were read and accepted. It was moved and passed that these two committees be discharged.

The Chairman of the Committee on the Cambridge meeting presented the following resolution which was passed:

Resolved: That on behalf of the members of the Association in attendance at the annual meeting of 1919, we express our appreciation of the sincere welcome extended to us by the officers and members of the Council residing in and around Boston, to whom, individually and collectively, we are indebted for many personal hospitalities, and through whose efficient cooperation we were privileged to have a most stimulating session.

REPORT OF THE PUBLICATION COMMITTEE

The following report of the Publication Committee was read and accepted after various amendments had been voted down:

The Publication Committee recommends to the Council that in the future each Publication Committee be directed to elect from its members, but not including the Editor or Associate Editors, a subcommittee of three which shall serve as an advisory body for the Editor, which shall decide any differences which may arise between authors and the Editor and with the Editor shall be charged with the conduct of the publications of the Association.

It is recommended that the Editor be empowered to print extra copies of the *American Anthropologist* not to exceed 100 which copies shall be supplied to members in Europe and Latin American countries at the rate of exchange existing in 1914 before the war provided that the amount is not less than the additional cost of printing such copies.

It is recommended that the Editor be given power to issue Memoirs from time to time as funds may be available but that such Memoirs shall bear serial numbers without a volume number and that each Memoir be issued complete in itself with an index.

Three new members of the Association were elected. Their names are as follows: E. R. F. Johnson, M. M. Dorizas, H. Z. Heronimakis.

After changes made at this meeting and at a subsequent meeting of the Council held on Tuesday, December 28, at 9 a.m. the following list of officers was offered by the Nominating Committee:

President: W. C. Farabee.

Vice-President: 1924, G. G. MacCurdy.

Secretary: A. V. Kidder.

Treasurer-Editor: J. R. Swanton.

Executive Committee: F. W. Hodge, G. B. Gordon, J. W. Fewkes, C. Peabody.

Council: (1924) Byron Cummings, G. G. Heye, H. J. Spinden,

C. M. Barbeau, W. D. Wallis, A. B. Lewis, S. Hagar, H. N. Wardle, S. K. Lothrop, R. T. Aitken, J. E. Pearce, F. Starr, W. E. Gates, M. R. Harrington, S. J. Guernsey, W. W. Hyde, B. F. Schappelle, W. E. Meyer, S. Trotter, E. P. Wilkins, W. F. Ogburn, E. S. Handy, C. L. Hay, J. B. Stetson.

Representatives of the Association on the National Research Council to serve for three years from July 1, 1921: B. Laufer and J. W. Fewkes.

Delegates for the Association to Section II of the A.A.A.S.: C. Wissler and J. W. Fewkes.

Committee on the Prehistoric Foundation in France: C. Peabody, G. G. MacCurdy, and N. Nelson.¹

The following resolution was proposed and passed:

Resolved: That the Association tender to Dr. Goddard their sincere appreciation of his services as Editor and of his most successful management of the funds of the Association as Treasurer. The Association would also like to express its satisfaction with the policy of Dr. Goddard in the development of the *Anthropologist*, in stimulating the departments of reviews and discussion, and in the securing of foreign articles.

The Council adjourned at 6 P.M.

COUNCIL MEETING, TUESDAY 9 A.M.

It was resolved by motions duly made and passed:

That the Executive Committee be given power to choose the place of the next meeting of the Association.

That a vote of thanks be given to the retiring President.

That a vote of thanks be given the authorities of the University Museum of the University of Pennsylvania.

That a vote of thanks be given to the Provost and other authorities of the University of Pennsylvania for its abundant hospitality.

That a vote of thanks be given Dr. Speck for his activities in behalf of these meetings.

That members elected at a meeting and not having paid their dues for the year in which they are elected shall not vote at that meeting.

The Council adjourned at 10 A.M.

ANNUAL MEETING, DECEMBER 28, 10:30 A.M.

The names of A. M. Tozzer, P. E. Goddard, H. N. Hall, and Theresa Mayer were added to the list of members nominated for the Council.

¹ The three other members of this Committee, elected by the Council of the Archaeological Institute of America, are G. H. Chase, W. N. Bates, and W. N. Stearns.

The officers and members of the Council as nominated were duly declared elected by a vote ordered cast by the Secretary.

The President, Dr. William C. Farabee, appointed the following committees:

Committee on Program: F. G. Speck (chairman), A. V. Kidder (sec'y *ex-officio*), P. E. Goddard, H. N. Hall, M. H. Saville, C. M. Barbeau, S. J. Guernsey, N. M. Judd, S. K. Lothrop.

Committee on Finance: R. B. Dixon (chairman), C. P. Bowditch, W. E. Gates, G. G. Heye, C. B. Moore, E. E. Ayer, W. H. Furness, C. L. Hay, A. M. Huntingdon, J. B. Stetson, Jr.

Committee on Policy: Clark Wissler (chairman), W. H. Holmes, S. Culin, G. B. Gordon, W. C. Mills, C. Peabody, F. Boas, J. W. Fewkes, A. E. Jenks, E. C. Parsons, A. M. Tozzer.

Committee on Publication: W. C. Farabee (chairman, *ex-officio*), J. R. Swanton (sec'y *ex-officio*), S. A. Barrett, S. Culin, J. W. Fewkes, A. A. Goldenweiser, F. W. Hodge, E. A. Hooten, A. Hrdlička, A. E. Jenks, A. L. Kroeber, B. Laufer, G. G. MacCurdy, W. K. Moorehead, S. G. Morley, E. Sapir, H. J. Spinden, H. N. Wardle, C. Wissler.

The following advisory subcommittee was subsequently elected by the Committee on Publication in accordance with the vote of the Council as given above (page 111): F. W. Hodge (chairman), J. W. Fewkes, B. Laufer.

The following papers were presented:

J. H. PENNIMAN, *Acting Provost*; Address of Welcome.

A. I. HALLOWELL, More alien influences in America.

CHARLES PEABODY, Report on the Prehistoric Foundation in France.

P. E. GODDARD, Notes on the Wailaki of California.

FRANZ BOAS, The methods of ethnological research.

T. MICHELSON, Some notes on the Plains Cree.

W. C. FARABEE, Prehistoric South American gold models of throwing-sticks.

H. N. WARDLE, A double-bowled pipe, probably Peruvian.

H. S. COLTON, The petroglyphs in Picture Canyon.

A. V. KIDDER and S. J. GUERNSEY, Early cultures in northeastern Arizona.

S. K. LOTHROP, The Nahua tribes of Nicaragua, Costa Rica, and Panama.

W. K. MOOREHEAD, Ruins in the Panhandle of Texas.

J. R. SWANTON, The social organization of the southeastern Indians.

A. A. GOLDENWEISER, Some contributions to totemic theory.

ELSIE CLEWS PARSONS, Kinship nomenclature of the Pueblo Indians.
R. H. LOWIE, Cultural relations of the Plateau Shoshoneans and the California Indians.

ERNA GUNTHER, Designs of Tlingit basketry (with remarks by L. Shotridge).

The following papers were read by title:

J. W. FEWKES, The Fire Temple, Mesa Verde National Park.

GRACE DANGBERG, Social life of the Washo.

H. N. HALL, Some hunting methods of the Yenisei Samoyed and Yurak.

Papers relating to Folk-Lore were presented by Elsie Clews Parsons, F. G. Speck, Theresa Mayer, and Gladys Reichard at the meeting of the American Folk-Lore Society. Folk-Lore papers by Georgiana G. King and P. E. Goddard were read by title.

The members enjoyed a dinner at the T-Square Club on Monday, December 27, and they were the guests of the Maya Society at a dinner on Tuesday, December 28.

ALFRED M. TOZZER,
Secretary.

ANTHROPOLOGICAL NOTES

OBITUARY—PROFESSOR H. P. STEENSBY

ANTHROPOLOGISTS on this continent will learn with regret of the death, on October 12, 1920, of Professor H. P. Steensby, one of Denmark's foremost geographers and students of Eskimo culture. Like so many of his fellow-countrymen Professor Steensby was early interested in Greenland, and gained his Ph.D. degree at the University of Copenhagen with a treatise "On the Origin of Eskimo Culture." For a time he subordinated ethnology to geography, and in 1908 travelled in Algeria and Tunisia; but a visit to West Greenland in 1909 revived his interest, and from the year 1911, when he became Professor of Geography in the University of Copenhagen, he devoted all his energies to the elucidation of the geographical, historical, and ethnological problems of that country. He was a notable contributor to the *Middelelser om Grønland*, publishing several treatises that have gained wide-spread attention. His best known work is his "Anthropological Study of the Origin of Eskimo Culture," in volume 53 of that journal, where he tried to prove, by an analysis of the geographical conditions surrounding each branch of the Eskimo race and of the main culture-elements, that the original home of what is distinctively Eskimo must be placed in the region of Coronation Gulf. This was the cradle of the Eskimo race, he believed, but when, through the exhaustion of the musk-oxen, apparently, it was compelled to spread out, east and west and north and south, in search of new food areas, the culture of the different bands became more and more diverse, partly through the influence of their new surroundings, partly through contact with neighboring peoples. After this work was published Professor Steensby took up the problem of the Norse discovery of America, and thought to locate on the shores of the Gulf of St. Lawrence the site of the original Vinland. He published a treatise on this topic in 1917, but in order to familiarize himself more with the geography of the region, he came over to Canada last summer. It was on his voyage back to Denmark that he suddenly fell ill and died.

AMERICAN FOUNDATION IN FRANCE FOR PREHISTORIC STUDIES

AMONG the Proceedings of the American Anthropological Association at its last meeting, printed in this number of the *Anthropologist*, will be

found the Report of the Chairman of the Joint Committee of the American Anthropological Association and the Archaeological Institute of America upon the project for the establishment of an American Foundation in France for Prehistoric Studies. This report, which not only assured the two societies of the desirability and feasibility of the plan but informed them that the budget for the first year had been guaranteed, was accepted, and a Governing Board of six was appointed.

On February 3, 1921, a meeting of the Governing Board was held at the Hotel Plaza, New York, and Prof. George Grant MacCurdy was elected first Director of the Foundation. Dr. Charles Peabody is Chairman of the Board and for the present will also serve as Treasurer of the Foundation.

The year's work will open at La Quina (Charente) on July 1st. After a stay of some three months at La Quina, there will be excursions in the Dordogne, in the French Pyrenees, and to the Grimaldi caves near Mentone. The winter term will be in Paris, and the work of the spring term will include excursions to the important Chellean and Acheulian stations of the Somme valley, to Neolithic sites of the Marne or some other suitable locality, and to Brittany for the study of megalithic monuments.

Students may enroll for an entire year or for any part thereof. Those who contemplate entering, either for the year or for the first term, should communicate immediately with the Director, at Yale University Museum, New Haven, Conn., or with Dr. Charles Peabody, Peabody Museum, Cambridge, Mass.

One Foundation scholarship of the value of 2,000 francs is available for the first year. The special qualifications of the applicant, together with references, should accompany each application. The Foundation is open to both male and female students.

The address of the Director after June 15th will be "care of Guaranty Trust Company, Paris."

THE SEVENTIETH ANNIVERSARY OF DR. J. WALTER FEWKES, Chief of the Bureau of American Ethnology, which occurred on Nov. 14, 1920, was celebrated at a luncheon in the Smithsonian building, Washington, D. C., attended by about forty of his friends and associates. On this occasion he was presented with a specially bound volume of letters of congratulation contributed by his acquaintances in all parts of the country. Dr. Fewkes has recently been elected an Honorary Member of the Société des Américanistes de Paris.

DR. FRANZ BOAS, Professor of Anthropology in Columbia University, has been elected an Honorary Member of the Société des Américanistes de Paris and of the Folklore Society of London. He has also been elected a Corresponding Member of the Prussian Academy of Sciences and has received the gold medal of the Anthropological Society of Berlin.

MR. PHILIP AINSWORTH MEANS was appointed in May of last year to the directorship of the Museo Nacional de Arqueología in Lima, Peru, assuming office in November.

EARLY in November Dr. J. W. Fewkes accompanied Mr. Stephen T. Mather, Director of the National Park Service, and several gentlemen connected with the Denver & Rio Grande Railroad, on a trip of inspection to the Mesa Verde National Park, Colorado.

THE degree of Doctor, *honoris causae*, has been conferred upon Dr. Aleš Hrdlička, Curator of Physical Anthropology in the U. S. National Museum, by Prague University.

ON NOV. 8, Dr. Arístides Mestro was made Honorary Professor of Anthropology in the Museo Antropológico Montané, University of Habana.

DR. LUIS MARIA TORRES, Head Professor of the Archaeological and Ethnographical Departments and Professor of American Prehistory in the National University of Argentina, has been appointed Director of the La Plata Museum.

PROF. CARL TOLDT, President of the Anthropological Society of Vienna, died on November 13 last. A memorial meeting in his honor was held at the University of Vienna on December 13.

MR. J. A. JEANÇON, who had been filling an appointment as Special Archaeologist in the Bureau of American Ethnology, has accepted the position of Director and Curator of Archaeology in The State Historical and Natural History Society of Colorado.

MR. SYLVANUS G. MORLEY of the Carnegie Institution, and Mr. William E. Gates are engaged in researches among the Mayan peoples of Guatemala.

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OBSERVATIONS ON THE ANTHROPOLOGY OF HAWAII

By A. L. KROEBER

THE First Scientific Conference held under the auspices of the Pan-Pacific Union at Honolulu, August 2 to 20, 1920, can best be described as surprisingly successful. The well-planned arrangements were realized smoothly, and the intelligence, hospitality, and forethought of the island residents made the conference equally pleasurable and profitable to visitors. The attendance of delegates, of whom there were fifty from outside the Hawaiian Islands, was large and representative enough to invest the proceedings with the quality of stimulating seriousness. At the same time the conference remained sufficiently compact to render not only sectional meetings but the general sessions worth while to all. Thus geographers, geologists, zoölogists, botanists, and anthropologists were drawn together. The writer recalls no scientific gathering in his experience that was characterized by so lively a spirit as this one.

The anthropological delegates present included F. Wood-Jones, Gerard Fowke, Clark Wissler, W. E. Safford, A. M. Tozzer, A. L. Kroeber, K. Kishinouye, and N. Yamasaki; and of local students, or those for the time attached to the Bishop Museum, W. T. Brigham, J. F. G. Stokes, K. Emory, J. S. Emerson, T. G. Thrum, R. T. Aitken, L. R. Sullivan.

In view of the interest in Hawaiian anthropology which the conference will surely help to spread, the following observations of a first time visitor are offered.

Ethnology and Archaeology. It was the unanimous opinion of

those present at sectional meetings that in this region ethnology and archaeology cannot be divorced even temporarily. There appear to be ancient remains of but one culture in the Hawaiian islands—at least nothing significant of any other has yet been noted. This culture is that of the inhabitants whom Cook found, and is given an apparently reliable perspective of at least some centuries, provided a critical attitude is not wholly laid aside, by native tradition. To those who view such material askance, it may be said with positiveness that the temper of the Polynesian and of the North American Indian as to legend is strikingly different, and that oral tradition thus becomes a far more reliable and valuable tool in Hawaii than on the continent. The result is that archaeological studies carried on as such would promise to become mechanical and barren, unless unforeseen findings should develop; and on the other hand ethnology pursued without reference to archaeology would remain unnecessarily intangible. There thus exists for Hawaii a fortunate condition of almost enforced correlation of the two lines of work such as in America is most nearly approximated in the Southwest but nowhere quite attainable.

For the accumulation of new ethnological data the prospect does not seem promising in Hawaii. Something of the old life of course persists along with the language. But it is a full century since the natives, even before the arrival of the missionaries, deliberately broke up their religion and system of taboo. That this act meant a self-disembowelling of the culture needs no argument. A mass of data can still be obtained with patience; but it is likely to consist in the main of corroborations and variants. One subject alone seems to have been neglected, native music. There is urgent need of a systematic collection of phonographic Hawaiian songs and chants, many of which appear to be preserved among the older people uninfluenced by our music. An analytic study of the art by a specialist in the history and theory of music would then be possible.

If new discoveries are likely to be limited, it is because the ethnological literature on Hawaii is really large. At the same time it is very scattered. For something like half a century T. G.

Thrum's "Hawaiian Annual" has regularly contained material of great value. But who would look for first hand and high class ethnology in an almanac and year-book, and how many libraries possess a complete file? The non-specialist in Polynesian anthropology is likely to have an impression that relatively to its importance Hawaiian ethnology has been neglected. This is because of the lack of a single, well-rounded book to serve for ready and authentic reference, and because much of the literature that possesses high intrinsic merit is cast in apparently unscientific form. A general work on Hawaii written for the non-Hawaiian by a modern ethnologist would be welcome in many quarters—much more than residents on the islands, whom daily experience and continued reading have steeped in the subject, can easily imagine. It may be that such a work will soon be produced, either as a unit or as part of a comprehensive ethnic history of Polynesia, by the large-scope investigations in progress under the auspices of the Bishop Museum.

Racial and Psychological Anthropology. The impression that there is a Negroid strain in the Hawaiians can hardly be escaped. Their resemblance to the less specialized Mongoloids, such as East Indians and American Indians, is even more striking. At the same time, so far as the Hawaiians may be representative of the Polynesians generally, there is no doubt that these people form a highly specialized race, not easy to include off-hand in one of the recognized primary divisions of mankind nor to ally specifically with any subdivision. Whether this race has evolved through mixture, through the influence of environment in Polynesia or a former habitat, or through the influence of mutations which geographic isolation has preserved and fostered, will be an intricate and interesting problem to solve. The systematic researches which Mr. L. R. Sullivan of the American Museum of Natural History is carrying on for the Bishop Museum will no doubt commence the replacing of speculations on these topics by interpretations based on facts.

The Polynesian temperament is also difficult to formulate. We are wont to think of these people as child-like, affable, impres-

sionable, passionate, imaginative, volatile, gross, inconstant; yet very brief contacts reveal unsuspected qualities of reserve, shyness, humor, and stubbornness. So much is clear: their psychic life surely presents more sharply diverse facets than the coherent temperament of the American Indian. How far this difference may be congenital or on the other hand the effect on each individual of being reared in a more complexly coruscating culture is another problem that only the future can answer.

In one respect the Hawaiian Islands of today offer an unparalleled opportunity to the psychologist of race: there exists almost no color discrimination among the many races and nationalities. This means that when comparative tests or observations are made, there will be much less of social influence to eliminate before the mental workings of the individual or hereditary group are reached. What this promises, psychologists will be quick to appreciate who have run afoul of the entanglements of culture. A form-adjusting experiment inevitably results differently with a people that has and one that has not the custom of handling numerous devices and of working machinery. How much of the result is due to the subjects' inborn faculty and how much to the habits in which environment has immersed them, is usually pure estimate. In Hawaii, natives, Caucasians, and at least the island born among the Orientals attend the same schools and speak English familiarly. The subtle line that ever hems in the American negro before the white is scarcely sensed here. To be sure, there are social barriers; but they are mainly those of breeding and economic circumstance, rather than of race as a crystallized symbol. At any rate, Hawaiians and Chinese often associate and intermarry with Americans, and in no public matter, whether of residence, conveyance, business, or pleasure, is there exclusion on the basis of nationality or color. Of course, it would be contrary to human nature were prejudice and its consequences wholly wanting. But there is astonishingly little of it in evidence in Hawaii; so that a carefully and vigorously planned investigation in comparative psychology would more readily yield dependable results than almost anywhere else.

Insanity. An unusual opportunity for comparative racial

and social studies is afforded in the territorial hospital for the insane at Honolulu, where the mentally ill of the most heterogeneous nationalities live side by side in comfort and apparently greater contentment than in most asylums peopled by members of a single race. In the absence of Dr. W. A. Schwallie, head of the institution, Captain Abrahamsen was good enough to allow the writer observation of the inmates. He also furnished the following summary of their numbers as of June 30, 1920: Hawaiian, 53; part Hawaiian, 15; Chinese, 46; Portuguese, 50; Japanese, 83; American, 14; British, 2; German, 3; Russian, 7; Filipino, 23; Korean, 39; Spanish, 5; Porto Rican, 18; others 12; total, 370, of whom 104 were females.

When these figures are compared with those for the population estimates for 1919 (the 1920 census data on race are not yet available), there are some surprising results. The Chinese, who have been the longest settled of all the Asiatics on the islands, and have the reputation of keeping their insane at home as long as possible, constitute less than 9 per cent of the population but furnish 12 per cent of the asylum inmates. On the other hand, the Japanese figures are respectively 42 and 22 per cent. Thus the Chinese are more than twice as inclined to mental disease necessitating institutional treatment as the Japanese. A social cause is difficult to assign. A fair proportion of the Japanese are married and almost invariably are rearing families; but the Chinese, who have fewer women, are considerably intermarried with Hawaiians, from whom the Japanese rather rigorously hold aloof. It is quite possible that the underlying cause is either hereditary disposition or something as yet undetermined in the cultural ideals of the two nationalities. The sex proportion in the asylum is about the same: Chinese, 6 women out of 46; Japanese, 12 out of 83. Yet in the population at large there were in 1910 among the Chinese 9 men to every adult woman, among the Japanese but 3. It may be added that everyone on the Islands to whom I mentioned the racial disproportion was unaware of it. At the hospital the Japanese have the reputation of entering in acute states but of being most set of all the nationalities on recovering health and most

frequently doing so. This would point to manic-depressive and perhaps graver psycho-neurotic conditions. On the other hand, my casual survey left me with the impression of dementia praecox as the typical Chinese malady. Placid and vaguely smiling reactions among the Chinese patients are numerous in my memory.

As for the Koreans, they seemed listlessly apathetic. Their numbers are astonishing: less than 2 per cent of the population, 10.5 per cent of the inmates, all of them males. The Koreans are much the latest comers of the Asiatics in Hawaii, and have brought but few women: in 1910 fewer than a tenth of the adults were women. They show somewhat more inclination than the Japanese to marry Hawaiians.

The Filipinos, who are mostly Bisayans and Ilocanos and are bringing some wives—many of whom retain their home style of dress—have a healthy record: over 8 per cent of population, only 6 of insane. The sex proportion among their insane is probably not far from that in their whole population: 19 to 4. The Filipinos probably represent a selection of a more enterprising and vigorous element in the home population than the Koreans.

The Hawaiians form 8.5 and the part Hawaiians—mostly of Caucasian and Chinese admixture—6 per cent of the population, as against 14 and 4 per cent of the insane. The aggregate difference is not large: 14.5 to 18. In view of the apparent low frequency of insanity among most uncivilized peoples,—at any rate as determined for the North American Indians by Hrdlička—the ratio might be expected to run the other way. However, Polynesian culture was far from low, and for the last fifty years most Hawaiians have lived much the life of whites in the same economic circumstances. For instance they are nearly universally literate. Then, too, there is a probability of their rather wide-spread syphilitic infection. Captain Abrahamsen is inclined to look upon this as contributory to their rather high insanity rate. On the other hand, Dr. J. R. Judd of Honolulu is of the opinion that the Hawaiians are not more luetic than most populations. Statistics do not seem obtainable.

Women outnumber the men by 40 to 28 among the insane

Hawaiians and part Hawaiians. Among American Indians, Hrdlička found more than twice as many men as women. The sheltered, subordinate position of the Indian woman and the free social status of the Hawaiian woman may account for the difference. But there may also be an inherent racial difference.

For Caucasians of North European ancestry the populational percentage is 12, of insane 7. But these nationalities own most of the wealth of the Islands, so that it is likely that their mentally diseased frequently come to sanatoria on the mainland instead of the public hospital. Then, too, the American population consists perhaps one fourth of soldiers, who would also not enter the territorial civil hospital. For these reasons the apparent low insanity rate of these nationalities can not be accepted at face value.

The Porto Ricans are new-comers in Hawaii, aggregating 2 per cent of the population, whereas they contribute 5 per cent of the insane. One third of these are women, which is also the sex proportion in the population.

The Portuguese are from the Madeira and Cape Verde Islands, and are distinguished as black and white according as they carry or do not carry negro blood. The white seem more numerous. They have the reputation of being quarrelsome, perversely stubborn, and given to petty thieving. In the asylum they are considered the most intractable, insistent, violent, and least likely to recover of all nationalities. As might be expected, the proportion of insane is rather high: 13.5 as against 9.5 of the sane population. Both in the population and among the insane there are about as many women as men.

In summary, the ratio which the number of committed insane of the principal nationalities bears to the number expectable on a populational basis is approximately as follows:

Japanese.....	.55
N. European Caucasian.....	[.60]
Filipino.....	.75
Hawaiian, full and mixed bloods.....	1.25
Chinese.....	1.33
Portuguese.....	1.40
Hawaiian, full bloods only.....	1.65
Porto Rican.....	2.50
Korean.....	5.50

It is evident that it would be of exceeding theoretic interest, and no doubt of practical social value also, if the causes of these striking differences could be determined, especially in connection with the strength of respective tendencies toward the several forms of psychosis. Considerable painstaking investigation would probably be required to obtain sufficiently accurate data; but once secured, the information might well shed light on the psychiatric problem of the causes of insanity as well as on race problems.

At any rate, these facts serve to exemplify the unusual yield with which the Hawaiian field promises to reward a broadly viewed and systematic investigation of its race elements.

Language. The Hawaiian language retains greater vitality than the Hawaiian race. It is spoken by all full and probably nearly all mixed Hawaiians; by a considerable proportion of the longer settled Americans, including the most cultured strata; is partly understood by many of the others; some dozens of words have entered the vernacular English of speech and print; and nearly every one, whatever his nationality, has a few phrases at command. As it is one of the few languages whose orthography is phonetically consistent, it can be read at sight by anyone who speaks it and knows the Roman alphabet. The one theoretically regrettable feature of its spelling is the omission of the apostrophe to denote the glottal stop. But local residents, knowing the language, know where the stop falls though unwritten—and it is gratifying to hear it consistently pronounced by Anglo-Saxon larynges; while the philologist can easily supply it by comparison with other Polynesian dialects, in which it appears as *k*.

Since no Polynesian language seems to have been described by a phonetician, the following notes, based unfortunately on exceedingly brief observation, are presented.

The vowels are spoken grindingly, with the opposite quality from what we consider the open singing voice. The same handling of the larynx appears to be characteristic of old time Hawaiian chanting. The general effect of the language is therefore far less "musical" than its printed forms would suggest.

E, o, i, u are close, but not stringently so. E and o especially,

perhaps because they lack our *y* and *w* vanishes, seem almost as near to the English open as close vowels.

Accent is never written, but falls so preponderatingly on the penultimate vowel that for scientific purposes it should be recorded when it rests elsewhere.

The stops *p* and *k* are aspirated to about the same degree as in American English in the same position. They appear to lack the unaspirated quality of French surd stops and the momentary voicing characteristic of the "intermediate" stops of many American Indian languages, although on theoretical grounds such quality might be anticipated in a tongue that possesses only one series of stops to its Melanesian and Malaysian congeners' two.

Hawaiian *k* is sometimes described as being as near *t* as *k* in formation. I did not detect this articulation in my informants, and was told that it was chiefly characteristic of the island of Kauai but was going out of use.

The glottal stop is produced with unusual firmness. When intervocalic it is plainly audible in all but the most hurried or mumbling speech.

M and *n* call for no comment.

W is made with less rounding than in English, so that it approximates a bilabial *v*. Americans sometimes render it by a labiodental *v*. As Hawaiian *w* corresponds to *v* in most Polynesian dialects, its quality has historic grounding. What is written as intervocalic *u* seems sometimes to be *w*: I heard Kauai consistently as Kawai; but Maui, not Mawi.

H is vigorous and made with sufficient construction to suggest a feeble fricative.

L is evidently produced with the tongue more elevated than in English: I occasionally heard it first as *r* or *n*.

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DEMON DESIGN ON THE BORNEAN SHIELD:
A HERMENEUTIC POSSIBILITY

By NENOZO UTSURIKAWA

ON the front of the shields of the Kayan, Kenyah, and Klemantan tribes of central Borneo, almost invariably appears a demon design, a large demon face with a pair of wide-staring eyes, indicated by concentric circles colored in red and black, and with a double row of teeth with two pairs of tusk-like canines (fig. 24, *a-d, g*). Sometimes the monstrous face alone is depicted, but in a majority of cases it surmounts a diminutive human body whose limbs are highly distorted and often lost in an intricate design. Covering the design are rows and tufts of human hair, cut from the heads of slain enemies. On the interior surface are usually standing figures of men and women with hands up. Of these, W. H. Furness tells us that they are "painted there so that the warrior may be constantly reminded of his wife and family at home, for whose benefit and honor he is striving to bring back a fresh head."¹ In regard to the meaning of the monster design on the exterior, Furness does not offer any explanation. To Hose and McDougall, however, the face seems to be human, for "although in some shields there is nothing to indicate this interpretation, in others the large face surmounts the highly conventionalized outline of a diminutive human body."² H. L. Roth³ with all his sumptuous illustrations is terse and uncommunicative on this point; he only says "it is often colored with red ochre, or painted some elaborate design or fantastic pattern." In the east of Borneo, the realistic human figures, crocodiles, and the like constitute the shield designs, while practically all shields from western Borneo have floral designs.

¹ W. H. Furness, *The Home Life of Borneo Head Hunters*, Philadelphia, 1902; plate p. 80.

² C. Hose and W. McDougall, *The Pagan Tribes of Borneo*, 1912, vol. 1, p. 165.

³ H. L. Roth, *The Natives of Sarawak and British North Borneo*, London, 1896, p. 138



FIG. 24.—Bornean-shield and related designs: *a*. Dyak shield from Sarawak (Edinburgh Museum; L. Roth, II, p. 125); *b*. Kenyah shield from the Sultanate of Kutai, S. E. Borneo (A. R. Hein, p. 59); *c*. Kayan shield from Kutai, S. E. Borneo (A. R. Hein, p. 67); *d*. Shield of unknown provenance (A. R. Hein, p. 55); *e*. "Banapati" head from a kriss handle, Bali Id. (Kat. Reich. Mus., vol. VII, no. 701/92); *f*. "Rākṣasa" head attached to a flute, Lombok Id. (Kat. Reichmus., VII, no. 1614/10); *g*. Dyak shield from S. E. Borneo (A. R. Hein, p. 68).

It is Prof. Alois Raimund Hein who has taken most pains in an effort to explain the origin of this design in his celebrated book.¹ After a long and erudite discussion, he concludes that it has its origin in the Chinese tiger and dragon shields, but that it is treated in a manner characteristic of Dyak art. His conclusion rests on the following facts observed by him: that there is mention of dragon shields and their illustration in the fictitious Chinese *History of the Three Kingdoms*; that many such dragon and tiger shields have been in use among the Chinese soldiers, and that the Chinese settlers in Borneo must have employed these shields in their defense against hostile natives; that the dragon faces in China, Japan, India, and the East Indies are all alike, and hence the abiogenesis of Bornean form is unthinkable; that the Balinese Rakṣasa has horns too strongly developed for a Dyak model; that the Dyak paintings contain an isolated symbol and ornamental motive directly related to the Chinese Yin and Yang symbol (see fig. 24 g, at a). Throughout his volume, he endeavors to show how strongly the Chinese influence must have been felt in Borneo.

There are some phases of Bornean art which reflect China and the conclusion Prof. Hein arrived at elicits no small sympathy. In this particular case, however, I am inclined to differ with him. To decorate with such a fear-inspiring design is a universal human habit not confined to any particular race. As is clear from the comparative study of Bornean masks, the double rows of teeth with large tusk-like canines are typical in the southeast of Borneo. The same holds true in regard to the shield designs. Most typical demon heads are to be seen in the shields from the Kutai and Bandjermasin districts of Borneo; these, filtered into the north, it would be more reasonable to ascribe to an introduction by the Kayans, or Kenyahs, who are considered immigrants into Sarawak through central Borneo.² So far as we know, the early as well as large Chinese settlement was in the extreme north, and in the northwest of Borneo,³ while the Dyak-Chinese intercourse in the Bandjermasin district in the south was largely commercial in its character. It is well known that the southern coast of Borneo bears the brunt

¹ A. R. Hein, *Die Bildende Künste bei den Dayaks auf Borneo*. Wien, 1890.

² Hose and McDougall, vol. II, pp. 232.

³ *Ibid.*, vol. I, pp. 10, 16, 17; vol. II, p. 231.



FIG. 25.—Javanese and Bornean designs: *a*. Cover design (J. F. Scheltema, *Monumental Java*); *b*. "Banaspati" head from a temple edifice, Padjarakan, Java (Kat. Reichmus., v, no. 3017); *c*. Ghost mask of Mahakam Kayan (Nieuwenhuis, i, taf. 57); *d*. An erect Javanese "Kaara" (drum), surmounted by the head of a god, in the Copenhagen Museum (Jour. Anth. Inst., xxii, pl. 23, fig. 14); *e*. (left). Design on a Kayan bag, Upper Mahakam, central Borneo (Kat. Reichmus., ii, p. 62); *e*. (right). Design on a Kayan bag, Taman and Mahakam, central Borneo (Ibid.); *f*. Working table of Bahau Dyak (Nieuwenhuis, i, taf. 61b); *g*. Two figures of gibbons on the door of a Sebop house, Klemantan (Hose and McDougall, vol. i, pl. 123); *h*. "Pamuras" (thunder case) with a Nagara head, from S. E. Borneo (Kat. Reichmus., bd. ii, p. 113).

of strong Hindoo-Javanese influence. Such figures as "Banaspati" and Rakṣasa from Bali and Java (figs. 24, *e, f*; 25, *a, b, d, h*) and "Nagara" from southeast Borneo may be a revelation.¹ There are no "too strongly developed horns" in these figures as Hein alleges.

If for the moment, however, one accedes to Hein's view that the Dyak design is attributable to Chinese influence, how does he account for the absence of similar designs among the Dusuns in the northeast, with an admitted infusion of Chinese blood and culture? Further, in the Philippine island of Luzon, where there is historical proof of as long contact with the Chinese as in Borneo, we get no such evidences as those brought forward by Hein. Moreover, a demon-head shield also occurs in Nias, an island off the west coast of Sumatra, where there is seemingly no Chinese influence.

A still greater difficulty in Hein's contention is the fact that the demon face often surmounts an outline of a diminutive human-like body. It is improbable that a tiger would be grafted on to an anthropomorphous body. The reference to the ornamental design in the "Chinese Yin and Yang Symbol" is again dubious. It differs, strictly speaking, from the regular Chinese symbol; one in Borneo is an offshoot of an interlocking hook, well-nigh universal in central Borneo. And the resemblance of the demon faces in China, Japan, India, and the East Indies, to my mind merely bespeaks a common Indian origin as some ramified examples of Hindoo demonology are often found in these countries under the very same Indian names.

So far I have tried to point out that there are better reasons for seeking its origin southward in the Hindoo-Javanese source, if it need be sought outside at all, than northward in China.² In point of time, the Indian influence is prior and paramount in Indonesia; this needs hardly any word of explanation. The first recorded date

¹ Rakṣasa heads on the gates in Boecleng, Bali (Golyn, *Neerlands Indie*, p. 52) and at temples in Prambanam, Java (F. Benoit, *L'Architecture l'Orient Medieval et Moderne*) are still more convincing illustrations.

² E. Guinst is in accord with my view when he writes: "La question des boucliers est plutôt du domaine de l'Ethnographie que de celui des religions. Les têtes de tigres, les figures à gros yeux et à longues dents sont de toute le civilisations. A Java il y a une sorte de demon qu'on represente frequemment même sur les poignées de sabres et qui a ces traits caracteristiques. Il serait plutôt d'origine indienne que Chinoise." Hein, *Kunstl.*, p. 74.

of any Chinese venture into Indonesia is that of Fa-hien, (法顯), the Buddhist pilgrim who visited Java in A. D. 414.¹ There, he found plenty of Brahmins, and a gleam of Buddhism. Nearly contemporary inscriptions have been discovered at Koetli in Borneo and Java, placing beyond doubt the priority of the Indian influence.² In southern Asia, the same influence extended eastward even among the hills of Annam as early as the beginning of the Christian era. Even a little later, in the time of the Han dynasty, the travel from China was through central Asia. Fa-hien entered India by the same route, going home by way of Java. Furthermore, the Chinese do not appear to have been early and skilful navigators.³ According to Chinese information, already in 669 A. D., a prince of Brunei (Po-lo) is supposed to have sent an emissary to China; but since there is very little evidence that this particular passage refers to Borneo, it should not be taken too seriously. Indeed, according to the *Annals of the Gen Dynasty*, Kublai Khan sent an expedition against the islands of the Indian Ocean about the twelfth century.⁴ How much influence it exerted upon

¹ Col. G. E. Gerini even doubts that it was Java of today. See his *Researches on Ptolemy's Geography of Eastern Asia*, London, 1909.

² Kern, *Geden Kteeken en der oude indische beschaving in Kambodja onze E enw*, Jan. 4, 1904 (Cited in V. A. Smith, *Hist. Art. India and Ceylon*).

³ J. Crawford, *History of the Indian Archipelago*, 1820. Even at the time of Kublai Khan the Chinese coasted along in their voyage, without any compass. It took 68 days for Kublai Khan's army to reach Java.

⁴ According to the *Annals of the Gen Dynasty* (元史) compiled by "Sung-li" (宋濂), following an imperial decree of 1369, Great Kublai Khan sent expeditionary troops to Java, Sumatra, Luzon, and other islands impossible to identify, in February in the 29th year of his reign. Troops consisting of "20,000 soldiers" raised from Fukien and Hunan, under the command of two generals, were conveyed in "1,000 junks" provisioned for a year. They found the natives of Java at Kuran Mountain (拘欄山) and also at Song Yaru (戎牙路) and put several hundred to death. They speak of capturing "a huge ship with a demon head." It was the Javanese who had the demon head. The account is so terse that there is no mention of their shield designs. It took 68 days, from China, proving they came by coasting. The number of soldiers, vessels, etc., should be taken figuratively as the Chinese writer is always extravagant in description. At about the same time the Mongols harassed Japan. Perusal of the most graphic descriptions of the battles on the shores of Kiushu Island does not give any hint as to their shields, much less the ornaments on them, although they give an account of the short, poisoned arrows and terrific explosives of the Mongols, and of their manner of fighting, etc. Col. Gerini identifies the places where Kublai's forces touched with the islands lying west of Java and the southwestern tip of Borneo.

Borneo itself it is difficult to see. It is only for the fifteenth century and later that we have come into possession of any authentic historical accounts relative to Borneo. From what has been said, it must not be inferred, however, that the influence of the Chinese upon the inhabitants of Borneo is without significance; on the contrary I am inclined to think there must have been of necessity considerable flotsam of Chinese influence, so ubiquitous and pervasive particularly in later times. But whatsoever influence there was or has been from that direction, that fact is *per se* irrelevant to the central question at issue. Obviously enough, from what precedes, the Hindoo or Hindoo-Javanese influence should have received greater attention than has been paid by Hein.

In an ethnological investigation of this kind, the proper mode of procedure would be, of course, without any prepossession, to exhaust the hermeneutic possibilities in the immediate and proper setting. It would be more rational to compare, for instance, such shields as those shown in fig. 24, *a* and *b*, with ghost masks of the Mahakam Kayans (or Bahau Dyaks), fig. 25 *c*, or with Kenyah "Kayong" masks worn by the "Dyongs" (Shamans) in the soul-catching ceremony.¹ A pair of large round eyes, double rows of teeth with protruding tusks, and typically native ear ornaments made of tiger canines are common to both. The similitude is striking. Again, we find among the Bahau a figure like fig. 25, *f* carved on both ends of a working table. This is, indeed, a good replica of the Kayan shield design from Sultanate Kutai, southeast Borneo (fig. 24, *c*).

Nieuwenhuis saw similar ornaments among the Bahau (Mahakam Kayans) and the Kenyah objects. He sees some relation between this design and that of the shield.² In general type all

¹ The mask is very similar to the one figured by Nieuwenhuis. Nothing is said about what the mask represents but "the chant with which the Dayong begins his operations is essentially a prayer for help addressed to Laki Tenangan, or, in case of a woman, to Doh Tenangan also." (Hose and McDougall, vol. II, p. 30.)

² "Andere Beispiele für die Verwendung der Masken böser Geister als Verzierung finden wir in den sehr bekannten, ursprünglich von diesen Stämmen herrührenden, bunt bemalten Schilden, an deren Vorderfläche eine Art von Gorgonenhaupt dem Feinde Schrecken einflößen soll. Eine derartige Wirkung auf den ängstlichen Bahau, der sich stets von bösen Geistern umringt und verfolgt glaubt, ist sehr wohl denkbar.

"Um nicht zu stark abzuschweifen, soll das Menschliche Genital-motive, das in



FIG. 26.—Designs on shields of Borneo and Celebes: *a*. Ape design (Kat. Reichmus., II, no. 1239/135); *b*. Klawang shield, S. E. Borneo (Roth, II, p. 130); *c* and *d*. Dyak shields, S. E. Borneo (A. R. Hein); *e*. Kayan shield, Rejang River, Sarawak (Roth, II, p. 126); *f*. Toriodjao shield, Celebes (A. R. Hein, p. 75).

so far seem to show some relationship. Hence, we may infer that the shield design, despite a strong tendency to vary, is not an isolated exotic concoction divorced entirely from the ceremonial (or religious) and emotional life of the natives.

Starting back again from this point, let us re-examine the rest of the specimens. In fig. 24, *d* we have a demon head possessing essential attributes but surmounting an outline of a diminutive human body. In this, one is struck by the simian appearance in both the face and the attitude of body. I seriously wonder if this design is not an ape derivative; my impression is not, I think, altogether a wild one, for we have incontestable proof of an ape design on the shield (see fig. 26, *a*). Still more supplementary evidence comes from southeast Borneo (fig. 26, *b*). Here, apparently, two apes or possibly monkeys are represented, one upside down, its tail extending upward, serving to complete the facial outline of the other. This identical design (fig. 25, *g*) occurs in a more realistic form among the Sebops (Klemantan), on the door of a room. Hose and McDougall suppose the figures represented to be gibbons.

Such designs as figs. 25, *g* and 26, *a-f* may be considered as derivatives of the same.

We know that simian designs are chiefly used among certain tribes; for instance, the Long Pokuns (Klemantans), use the form of the gibbon and of the "sacred ape" (*Seminopithecus Hosei*).

In the course of a discussion of animistic beliefs, Hose and McDougall give us a sanguine testimonial to our supposition. They write:

Kenyahs, like all, or almost all, the other natives of Borneo, are more or less afraid of the Maias (the orang-utan) and of the long-nosed monkey and they will not look one in the face or laugh at one.¹

der Bahaukunst zu einer gang eigentümlichen Art von Verzierung Anlass gegeben hat, später behandelt und hier zur Besprechung des als Ornament ebenfalls häufig verwendeten Tierkörpers übergegangen werden." (*Durch Borneo*, vol. II, p. 242.)

¹ Vol. II, p. 73. And further, "In one Kenyah house a fantastic figure of the Gibbon is carved on the ends of all the main crossbeams of the house, and the chief said that this has been their custom for many generations. He told us that it is the custom, when these beams are being put up, to kill a pig and divide the flesh among the men who are working, and no woman is allowed to come into the house until this has been done. None of his people will kill a gibbon, though other Kenyahs will kill and possibly

How appropriate then such a simian design must be for ornamental purposes on a shield, to strike terror into the mind of an enemy. Many a diminutive figure, supposedly human, accompanying a monster face is suggestive of the simian posture, although such interpretation can not be actually borne out, for they often bear definitely human qualities, even tattoo marks; nevertheless, they may be compared with some interest with such designs as those appearing on the Kayan textiles from Upper Mahakam and Taman, central Borneo¹ (fig. 25, *e*).

In Upper Mahakam, central Borneo, the "salutup" (rattan strap) in war custom is covered with orang-utan's skin.²

It may be profitably added here, as a memorandum, that the central theme of the Indian epic of the Ramayana, is the contest between Sugriva, the Wanar's lord Ape king, and Kumbhakarna, Chief Rakṣasa of King Ravana's force, the ruler of Lanka (Ceylon).

Of course, it must be admitted that there is a strong similitude between some of the Bornean masks and shields on the one hand, and Brahmanic mythical figures on the other; and to account for it as a Hindoo-Javanese influence, direct or indirect, would not be inconsistent with the general cultural history of the area. It is not improbable that the feature was originally initiated by such influence, coming from the south, but in the long process of time the original tradition of ornamentation was forgotten and the ornament itself has undergone a new modification in the hands of natives.

POSTSCRIPT

The exact duplicates of the shields from the southeast of Borneo are recorded from the Toradja (or To-ri-adjas) in the interior of Celebes, and from Makassar. It is impossible to differentiate one from the other. They are in the Leiden Museum, Holland. Curiously enough, Roth, Bock, Furness, and Hose and McDougall

eat it. They claim that he helps them as a friend and the carvings on the beams seem to symbolize his supporting of the house."

¹ *Katalog des Ethnographischen Reichsmuseums*, band 11, p. 62. The figures are designated indiscriminately as "Menschenfigure"; but the prehensile lower limbs, long arms, and general posture, as well as references to simian figures by the author, favor the simian motive.

² *Ibid.*, p. 269.

have nothing to say about them nor do they figure any such specimens from Celebes.

A. Grubauer, who has been among the Toradjas, illustrates samples of their shields, which show very little likeness to any of those found in Borneo. As to the relation between the Borneo and Toradja shields, A. R. Hein himself, in spite of the illustration in his own book, affords little information. The only mention he makes is in regard to a shield "Kaliyawo" from south Celebes (tafel 10, no. 6, in his text), of which he says in a footnote:

Kaliyawo Kliau. Dr. Czurda hat diesen Schild auf Süd-Selebes erworben, wo er von den Buginesen und Makassaren nur bei grossen Festlichkeiten und feierlichen Processionen, in denen er Fürsten und Hauptlingen zum zeichen ihres Ranges nachgetragen wird, Verwendung findet.

We know that there has been an influx of Buginese immigrants into southeast Borneo from time to time; and it is not inconceivable that interchange of cultures might have taken place between the two regions, and that some of the Borneo shields might have strayed into Celebes in the form of trophies. Still, an element of uncertainty attends the genuineness of Toradja shields. And it would be well, so long as it remains uncertain, to dismiss without further comment their ethnological relation to Borneo.

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FURTHER NOTES ON ISLETA

BY ELSIE CLEWS PARSONS

THE following notes were made during a brief visit to Isleta and at interviews with an Isleta woman at Albuquerque, in a hotel room, safe from observation. Mexicanized or Americanized as is Isleta, fear of revealing Indian custom is as marked there as elsewhere, perhaps more marked than elsewhere. A woman who spoke English in the vernacular, who dressed as an American, and had worked for years in Albuquerque, resisted all endeavors to learn from her not only words of ceremonial import but clan names or the native name for the town. (It is *Shiäwi'ba*; at Sandia given as *Shiwipñn*). On all things Mexican or Catholic she was communicative and glad to be helpful. The leading man of the town, a man of property and position, a graduate of St. Michael's College at Santa Fé and author, so he said, of a book on the life of his people, was equally timid. The book is to be published after his death, he announced, "as a keepsake." He would have no dealings with a stray scientist—he was afraid to, said a neighbor, citing his fears as a justification of her own. In the hotel room fear of neighborly eyes was precluded, but even with this immunity fear lest supernatural harm might result had to be combated. Were my informant to fall sick at any time she would have to confess to her doctor her traffic with me. "I hope to God nothing will happen to me," she would reiterate. Her reference to voluntary confession was significant, of course; expressions of fear lest "something happen" for revealing native ways is common in all the pueblos, but the idea of voluntary or quasi-voluntary confession is, one surmises, essentially Catholic, a borrowed trait.

KINSHIP TERMS

Mother, woman and man speaking,¹ *nana*,² voc. *inke'*,³ desc.

Reciprocals:

¹ No indication to the contrary, bisexual use of terms is implied.

² *nana* and *tata* are Spanish terms for mother and father (Harrington, J. P., "Tewa Relationship Terms," *American Anthropologist* (N. S.), XIV, 1912, p. 493).

³ *nkʷe'i*, recorded by Dr. Boas from another informant.

*infiuwei*¹, desc. and voc., for female

*inuwei*², desc. and voc. for male

Father, *tata*, voc.

inkai, desc.

Reciprocals:

infiuwei

inuwei

Mother's mother, *chii*, voc.

inchii, desc.

Reciprocal:

maku, voc. for female and male

inmakuwei, desc.

Father's mother, *luro*, voc.

inlure, desc.

Reciprocal:

maku, voc.

inmakuwei, desc.

Mother's and father's father, *tee'*³ voc.

intei, desc.

Reciprocal:

maku, voc.

inmakuwei, desc.

Mother's sister, *kechu*, voc.

inkechei, desc.

Reciprocal:

inöawwei, desc.

In address *öawi*⁴ would not be used, but the personal name.⁵

Father's sister, *kiwu'* (*kyuu'*)⁶ voc.

*inkiwei*⁷, desc.

Reciprocal:

*inch'awwei*⁸, desc. for female

int'uwei, desc. for male. In address

ch'ave would not be used, but the personal name.⁹

¹ *inp'iuwei* (Boas).

² *in* or *im* and *wei* are possessive prefix and suffix, e. g., *malë*, house, *inmalëwei*, my house.

³ Cf. Barbara Freire-Marecco, "Tewa Kinship Terms from the Pueblo of Hano, Arizona," p. 279. *American Anthropologist*, N.S., vol. XVI, 1914.

⁴ Dr. Boas records *ghwi* for address.

⁵ No reluctance to mention personal names was observable.

⁶ Cf. Freire-Marecco, p. 278.

⁷ *nk'uwei* (Boas).

⁸ *nch'abewei* (Boas, Parsons).

⁹ However, I did hear *ch'abe* used.

Mother's and father's brother, *meme*,¹ voc. '
inmemei, desc.

Reciprocal:

chunu, voc.

inchunuwei, desc.

Sister, older, *tutu*, voc.

intutei, desc.

Sister, younger, w. sp., *p'eechu*, voc.

inp'eeche', desc.

Sister, younger, m. sp., *inkwimuwei*,² voc.

inkwimuwei, desc.

Brother, older, *papa*, voc.

impape', desc.

Brother, younger, *p'aiyu*, voc.

imp'aiyuwei, desc.

Cousin, *prima*, *primo*, voc.

imprima, *imprimo*, desc.

or

the sister-brother terms.

Affinity terms:

Parent-in-law, *int'arawei*,³ desc.

Reciprocal:

int'arawei, desc.

or

Mother-in-law, *int'arakewei*, desc.

Father-in-law, *int'arakaawei*, desc.

Sister-in-law, *insuëyiwei*,⁴ desc.

Brother-in-law, *inyewei*, desc.

In address, parent-child, sister-brother terms are used.

kumpairi (Sp. *compadre*) is the reciprocal term between wife's father and husband's father.⁵

Husband, *insuëwei*,⁶ desc.

Wife, *inliawei*, desc.

Mother's relatives, *inkeamt'aiwei*

inkeammatuñwei, a more inclusive term.

Father's relatives, *inkaiamt'aiwei*

inkaiammatuñwei

¹ Cf. Freire-Marecco, p. 274.

² *kwim'u* (Boas).

³ *nt'ärwei* (Boas).

⁴ *insiüwei* (Boas).

⁵ Boas.

⁶ *insir'iwei* (Boas). Cf. Freire-Marecco, p. 279.

For great-grandparents there are no terms of address distinctive from grandparent terms, the terms are only compound descriptive terms.

inchibeke, my grandmother her mother.

inchibek'aa', my grandmother her father.

intebeke, my grandfather his mother.

intebek'aa', my grandfather his father.

Teknonymous usages were denied, but the denial should be tested by observation. . . . The cousin terminology should also be tested by observation. In the one opportunity presented, a woman called her father's sister's daughter and father's sister's daughter's daughter *kyuu'* "because when her father's sister died she had to take her father's sister's daughter for her *kyuu'*," a statement which is explicable only on the basis that the functions of the father's sister are important at Isleta as elsewhere among the Pueblo peoples. And in fact the father's sister does figure in name-giving at Isleta and in dance ceremonial. . . . Analogously in the matter of cousin nomenclature it was stated that a certain girl called her mother's brother's son as well as her mother's brother, *meme*. . . . As elsewhere, unrelated seniors may be addressed as "mother" or "father," and juniors, as "child."

SANDIA KINSHIP TERMS

Sandia (*G'aishiwim*) is a Tanoan settlement off the railway and about thirty-two miles east of Isleta.¹ The kinship nomenclature I recorded in Sandia presents the following variations.²

innanei (desc.), mother

intatei (desc.), father

Reciprocal, *impyuwei*, w. *innuwei*, m.

bato', mother's sister, father's sister, w.sp.

Reciprocal term:

bach'e

imbachai

bakwem', father's sister, m. sp.

¹ Isleta is 13 miles west of Albuquerque, Sandia about 3 miles east of Bernalillo.

² Sandia people (*nafihun*) were said at Isleta to drag their words. (A like distinction is emphasized by Hopi informants in regard to Hopi dialectical differences, and by Keresan informants about Keresan dialects.) Taos people (*thūwinin*) are said to speak an intelligible but different dialect.

Reciprocal term:

impaiwei

Sister, m. sp., *kwemei*

Brother, w. sp., *papei*

Mother-in-law, m. sp. *intuwei* [?]

Father-in-law, w. sp. *intawei*

ISLETA CLANS

In "Notes on Isleta, Santa Ana, and Acoma"¹ I recorded a list of Isleta clans from a Laguna man who had grown up in the Laguna settlement within an eighth of a mile of Isleta. With one exception, this list which is conformant to the familiar clan nomenclature of the Pueblo tribes differs from the following list of clans or divisions I was given in Albuquerque, divisions that are theoretically oriented and associated with corn of different colors:

thũ t'ainin, day or daylight people . . . East side (*dirbau*) . . . white corn
narni (*t'ainin*), ? . . . North side (*dir'iu*) . . . black corn
pajini (*bachũrmi*) (*t'ainin*), name of an ancient village. . . West side (*dũrnan*)
 . . . yellow corn
k'oapin'we } (*t'ainin*), name of an ancient village . . . South
fiaruñwe } side (*dũhu*) . . . blue corn

Zenith (*ky'ie*) and Nadir (*nĩrai*) are represented by corn of all colors (*kwobutin*, all together) but there are no social divisions to correspond to these directions. My informant appeared to think that marriage was allowed within these divisions, but she could cite only one such endogamous marriage—in the *thũt'ainin*, on the part of the leading man previously referred to.

It was impossible for me to verify my earlier list of clans or the similar lists made by Bandelier and Lummis. (See Table 1). Informants stated most positively that they did not have clans (*t'ainin*) of that kind at Isleta. They may have been prevaricating, although one informant on matters which are generally held more secret than clan names was very frank. Three other hypotheses are tenable. The earlier lists may have referred to Isleta-Laguna

¹ *American Anthropologist*, vol. XX (1920), p. 56.

TABLE I

Isleta Clan Lists

Bandelier (1890) ¹	Hodge (Lummis) (1896) ²	Parsons (1920) ³
Sun	Sun	Day
Bear	—	Bear
Eagle	Eagle	Eagle
Goose	Goose	Goose
Corn ⁴	Corn ⁴	Corn
—	—	Chaparral Cock
Deer	Deer	—
Antelope	Antelope	—
Water	Water pebble	—
Elk	—	—
Moon	—	—
Duck	—	—
—	Wolf	—
—	Earth	Lizard (Earth) ⁵
—	Mole	—
—	Mt. Lion	—
—	Parrot	Parrot
—	Turquoise	—

clans or to equations⁶ of Isleta clans with Isleta-Laguna clans or to a sometime classification of Isleta clans which has been superseded. I incline to the third hypothesis. One Isleta informant had observed that the Corn people were included among the East Side people and the Parrot people among the North Side people.

¹ *Final Report*, pt. 1. *Papers, Archaeological Institute of America*. Amer. Series, vol. III (1890), p. 273.

² "Pueblo Indian Clans," *American Anthropologist*, vol. IX (1896), pl. VII.

³ Published in 1920 and collected in 1919, but from an informant who had been absent from Isleta for several years.

⁴ Both Bandelier and Hodge subdivide the Corn clan into four clans—Yellow, Blue, Red, White. I incline to think that their informants may have been referring to the directional distribution cited by my informants.

⁵ At Laguna and Acoma, Lizard and Earth are two names for the same clan.

⁶ In Zuñi lives an Isleta woman called Felicita (Zuñi, Pelise) who has affiliated herself with the *pikchikwe* clan. In the east there is no such clan. A mutual Zuñi acquaintance suggested that Pelise had joined the *pikchikwe* because it was the largest Zuñi clan and had the most prestige. This performance of Pelise indicates either some indifference to clanship at home or to membership in a clan which has no equivalent at Zuñi. The latter hypothesis is borne out by another Zuñi alien, Tomos of Laguna. He, too, affiliated himself with the *pikchikwe*, and stated to some of us that there was the same clan at Laguna. Asked by me for the name of it in Keresan, he answered that he had forgotten. Forgotten the name of his own clan! Everybody laughed.

Of further equations she seemed uncertain. At Sandia, where the existence of clans was denied to me as it was denied twenty-five years ago to Mr. Hodge, a girl had remarked incidentally that of the Goose people there was only one boy left in Sandia, and my Isleta acquaintance was positive that there were clans in Sandia, *i.e.*, divisions such as she knew them in Isleta, only people did not care to talk about them. Reticence, no doubt, but I can not but think it is reticence mixed with ignorance. My guess is that, thanks to Spanish influence, to the prevalence of Spanish custom in marriage and house owning, the old clan system has broken down and given place to a division based on directional distribution.

Directional distribution is a familiar pattern of organization in Pueblo Indian circles, and in the present connection it is a striking fact that Cushing found this organization feature characteristic of Zuñi clans. Neither Kroeber nor I found at Zuñi the directional clan distribution emphasized by Cushing, but directional distribution of the rain priesthods, priesthods based on clan affiliations we, together with Stevenson, have found.

The Zuñi rain priesthods have a parallel or rather prototype at Isleta (and probably among the eastern Keresans) in the four clan heads, all men, of each of the four clan divisions—the *thüt'-aikabede*, *nart'aikabede*, *k'oapint'aikabede*, *bachürt'aikabede*. At the solstices these clan heads go into a retreat of four days to fast and pray. The winter solstice is called *tixu' kyaawe be'amba*, "south our father goes," the summer solstice, *tiu kyaawe be'amba*, "north our father goes," and the dates of these fasts are now fixed arbitrarily as from December first to sixth or eighth, and from June first to sixth or eighth. The retreats are made in the houses of the heads of the four clan divisions. The *thüt'aikabede* go in first, but there is no other precedence or rotation, and all the sets might go in synchronously. The head man of the set is chosen by his predecessor. There is a woman attached to each set to keep their room warm during their retreat and generally look after them, visiting their room three or four times a day.¹

¹ As at Zuñi it is the economic character of the "priestess" which is conspicuous.

MOIETIES

Between the clan heads or clans and the ceremonial moieties called *shifunin* or Black Eyes (*shi*, eye) and the *shuren* or Red Eyes there is, contrary to an earlier statement, no relationship. The children of a family are divided up between the two moieties,¹ the first born being assigned to the father's group, the second child to the mother's and so on in alternation, providing the parents belong to different moieties, but as the moieties are not exogamous both parents may belong to the same moiety. The *shifunin* "take from June to November" and the *shuren*, from December to May, and in this sense the terms Summer people and Winter people may be used, but the seasonal terminology was not familiar to my informants. Each group has its own head or chief—*shifunkābede* and *shurekābede*—a lifelong position to which a younger man is trained as a successor; and each group has its own estufa, *tulai*. These two estufas are square, non-detached rooms, the door surmounted by a terrace figure (*nabese*).

ROUND HOUSE AND SPRUCE DANCE

There is a third estufa which, in the English vernacular used by townspeople, is called Round House—*tula kwirini* (*kwirini*, round). This estufa is used to dance in at Eastertide and, at night, in the *liwa pūr* or Spruce dance of February. This dance appears to be a *shiwana* or *k'atsina* dance without masks.³ My

¹ My Laguna informant made the same statement, correcting his statement of the year before. He added that your father would choose a man either of his own moiety or the other to initiate you and give you your estufa or Black Eyes or Red Eyes name. See p. 166.

² This is a correction to my earlier account, unless it is understood that the *shifunin*, since "they turn the sun back to winter," are Winter people, and the *shuren*, turning the sun back to summer, are Summer people.

³ As noted in my first account the only masks worn at Isleta are worn by the *teen* or clowns, three *teen* from the Black Eyes, three from the Red Eyes. They do not come out every year. They came out last February (1920), and before that in 1914. Their masks are white with red around the eyes, and short, "doglike" ears. Unlike the *ne'wekwe-kashare*, delight makers of Zuñi and of the Keres, they wear no corn husks on their heads. They wear a coat and trousers of buckskin.

According to my Laguna informant the *shuren* clowns are painted red and white,

informant, indeed, equated *liwan* with *k'atsina*, saying that *shiwana* (*k'atsina*) was "just the same as *liwan*," spruce, or, as she said, evergreen. The dancers—thirty-nine or more men—wear the usual armlets, waist bands and collars of spruce, the usual pendant foxskin, *tuwexai* (*tuweh'thě*, fox), and the usual leg rattle of turtle shell and deer toes. On the left leg they wear a rattle of leather and those bits of tin which sometimes fringe a dance kilt. They carry a gourd rattle. Two stiff eagle feathers are on the left side of their head and some downy eagle feathers on the right. In front are two horns of red pasteboard, trimmed with silver buttons. The horns are called *nak'ee*, although *k'ee* means feathers. The face is powdered white with a lumpy substance called *tuñi*, and under the eyes is a streak of red. (This mineral pigment is got in Navaho trade.) The dancers are in single line, the two dance managers, as usual, in the centre of the line, and all sing as they dance. They dance not only at night, but in the plaza (*paěpinla*, middle of village) during two days, coming out three times before breakfast, and four times in the afternoon, each time dancing four times—to east, north, west and south. A set of dancers is presented from each of the square estufas, and they alternate in dancing, each set returning to their respective estufa while the other set is dancing. The *kabede*, either of *shifunin* or of *shuren*, is at the head of the line of dancers. He wears white trousers and buckskin leggings, around his head is a band of green (spruce, according to my informant but, more probably, yucca), and in his hands he carries twigs of spruce. He does *not* sprinkle meal, as does elsewhere the leader of masked dancers. (Indeed, curiously enough, sprinkling meal or pollen appears to be an unfamiliar rite at Isleta. Pollen (*bapthũ*) is collected by women to drink in water as medicine (*nakũ*), a Hopi usage also.) Nor was the dance thought of in religious terms by my woman informant. The idea that it might be held for rain or for crops seemed really unfamiliar to her. It was only for amusement, although she admitted that persons who knew prayers might say them to the dancers, and that when the

and the *shifunin* clowns, black; hence the names of the moieties, Red Eyes and Black Eyes.

dancers entered the estufa those present breathed four times from their clasped hands (*ishuchi*), "to have more life," a rite identical with the Zuñi rite of *yechu*.¹

Wilawe

In attendance on the dancers are the *wilawe*, seven of them, three or four from the Black Eyes, three or four from the Red Eyes, each group appointing three one year, four the next year. The *wilawe* wear white trousers, buckskin leggings, a blanket, and around the head a band of green. They carry a little cane—*wilawetu'*. Painted like the dancers, the *wilawe* are without horns. If the dancers' horns blow off or a piece of spruce drops or the costume becomes in any way disarranged, the *wilawe* play valet. Each dancer is given pottery and hardware by his father's sisters and it is the duty of the *wilawe* to pile up these gifts in the estufa so that each dancer may find his own to take home. The *wilawe* do not make prayer-sticks, but they have to learn prayers. (All these functions together with the term of office remind us at once of the *koyemshi* of Zuñi as well as of the *tsatio hocheni* of the Keres.)² Formerly the *wilawe* were appointed by the *t'aikabede*, the *kazik'*; nowadays they are appointed by the head of the *kumpawilawe*, *kumpawilawe ch'umida*, or, as he is called, *inkaawei*, my father.

T'aikabede, Kumpawilawe, Kaan

The last *t'aikabede* (people, chief) died about thirty-five years² ago.³ The people worked for him, their "father," the men bringing

¹ The Zuñi rite of breathing from the clasped hand of another was also familiar to my informant. It is done at Isleta in connection with the medicine man (*kaan*), after he has completed his ritual and is taking leave.

² Indeed the *wilawe* or *tuwilawe*, as he called them, were equated by my Laguna informant with the war-captains of Laguna. The *wilawe* in their appointment and functions are furthermore suggestive of the *akicila* or policing system of the Plains Indians. The *wilawe* are a part of the dual division which is in turn reminiscent of the organization of one of the less remote of the Plains tribes, the Pawnee. The bundle system of the Pawnee (see Murie, J. R., "Pawnee Indian Societies," *Anthrop. Papers. Amer. Mus. Nat. Hist.*, vol. XI, 1916,—in each bundle, I recall, there are two ears of corn which are referred to as "mothers") is also highly reminiscent of the corn fetich system of the Tanoans of Isleta as well as of the other tribes. There is great need of investigation at Taos to throw light on possible cultural relations between the Plains tribes and the Indians of the towns.

³ According to my Laguna informant, they then tried to make a *shuren* man

him wood and planting and harvesting for him, and the women going to his house to grind. He would settle troubles for people,¹ arbitrate quarrels over a dance, give advice to everybody. He was chosen for life by all the older men. He was not a society or medicine-man (*kaan*), and my informant did not know his clan. His wife, a *narnin* woman, survives. As she did not do well by the people, they no longer take care of her.

Presumably the *t'aikabede* nominated the governor (*tabude*) as well as the *wilawe*. Today it is the *kumpawilawe ch'umida* who nominates the governor, he nominating the two lieutenant governors (*těnyientl'n*) and he, in turn, the two *fiscales* (*kaveun*). There is a crier, an old man who belongs to the *thūt'ainin* and who has been crier since my twenty-five year old informant could remember. He is called *axa'pali* (*axa*, our father) and he calls out from the roof of *shifun tulai*, summoning the men to a council meeting or to work on the ditch.

Dances are not called out. The *kumpawilawe ch'umida* decides on dance dates and men tell their wives at home about the coming dance.

As stated in the earlier account, the *kumpawilawe*, like any curing society, are recruited through sickness. "If a man gets sick, he can promise to become *kumpawilawe*." There are today, according to my informant, six *kumpawilawe*. (*Masewi*, said she, is the Laguna word for them, thus equating them with the *u'pi* of the Keres and the *apilashiwanni* of Zuñi.)

The *kumpawilawe* are on guard² for the *kaan* or "fathers" *t'aikabede*. "There were meetings, meetings, meetings." Finally the man died, and they gave up trying.

¹ Nowadays troubles are referred to the governor, the idea of referring them to the clan heads seemed unfamiliar.

² Presumably, as elsewhere, against witches (*shahüre*). Here, as at Laguna, a pinch of ashes will be thrown against the window or dropped at the door as witch prophylaxis. There is an analogous use of ashes by the Hopi, in Hopi terms, a dis-charming rite.

My Isleta informant would not buy a *manta* from Zuñi last year because she had heard that witches there robbed the dead to sell their clothes. In her belt she had tied a piece of (*pakuntli*) to burn its tip and fumigate against witches. The same wood is anti-witch fumigation at Laguna (*kchuma*) and at Cochiti (*Katshrana*). (N. Dumarest, "Notes on Cochiti, New Mexico," *Memoirs American Anthropological Association*, vol. VI, no. 3, p. 154, 1919.

during their curing ceremonials during which they fast (*behwehuñwe*) four days, taking, my informant felt positive, no food or water, but only cleaning their stomachs daily. In course of time, perhaps two or three years, the convalescent might join the society, unless he decided to pay his doctor at the time of treatment, paying him with food or calico or buckskin. There are but two sets of *kaan*, the *dñe*¹ *kaan*, numbering from fourteen to sixteen, and the *bir*, i.e., Laguna *kaan* (*birni* = Laguna people). The latter group of twelve to fourteen contains men both from Laguna-Isleta and Isleta. There is no specializing by the two groups in diseases. Stick-swallowing, fire handling, masking and dancing are not practices of the *kaan*. The *kaan* make no use of the estufas, having rooms of their own into which the people go in the *daikwan* or all round curing ceremonial of March. It is the *kaan*, not the clan heads, who are in charge of the *geide*, altars, and *iamaparu'* (Keresan, *iyatik*², Zuñi, *mi'we*), the corn ear fetiches.

CEREMONIAL CALENDAR

<i>tixu' kyaawe be'amba</i> north our father goes (winter solstice)	Dec. 1-8	Retreats or fasts of clan heads who make <i>tuwe'</i> or prayer-sticks to take to the fields. The <i>mapũ tuwe</i> they make means corn with glumes (<i>mapũ</i>) prayer-sticks. Women bake bread for the clan heads to eat at the end of their fast and to take home what is left. All the men make prayer-sticks to place in the middle of the fields. Conjugal continence is generally observed.
<i>Consision</i> (Feast of the Immaculate Conception)	Dec. 8	
<i>Guadalupe tuè</i> (day-)	Dec. 12	At night boys, 12-15 years old, dance from house to house for Guadalupe. The people of the house give them bread, doughnuts, etc., or a meal at table.

¹ The word, I think, means village. It may be the same word as that for day, as the sounds are elusive—*tñe*, *tñwe*, *thñe*, *lñwe*.

These "village fathers" and "Laguna fathers" were equated with the Flint *cheani* and Fire *cheani* by my informant in Laguna.

Gigekwi birxen autuwe Dec. 16-25
(our mother virgin feast
days)

*nufe pūr (fűě)*¹ Dec. 25-28
Christmas dance²

Four days dancing in cemetery in front of church (*namisatu*). Christmas night dancing in church. Men and women dance in two sets, *shifunin* coming out first and alternating with *shuren*. In the cemetery they stand in two rows, men and women alternately. In the church there is but one row. The *wilawe* are in charge.³

Jan. 1 Election of officers and of *wilawe*. Men go to the house of the governor and dance *reininad* for him, also to the houses of the lieutenants and "captains" (*wilawe*).⁴ The governor throws presents of all kinds to the dancers, the relatives and friends of the governor having contributed.

reininad thűwe Jan. 6
Día de los reyes
(Epiphany)

The canes (*tu*) of the officers are "baptized," *i.e.*, holy water is sprinkled on them in the church by the priest (*tashide*). The outgoing governor hands the cane to his successor inside the court house (*kurtinadě*). Dance in which women join. Dancing as on Jan. 1 at officers' houses.

liwan pūr Feb.
Spruce dance

¹ *Noche buena?*

² Cf. E. C. Parsons, "Notes on Acoma and Laguna," *American Anthropologist*, n. s., vol. XX, p. 171, 1918; "Nativity Myth at Laguna and Zuñi," *Journal American Folk-Lore*, vol. XXXI, p. 260, no. 4, 1918.

³ At Laguna the *kashare* are in charge of the Christmas dancing.

⁴ Cf. "Notes on Acoma and Laguna," pp. 168-9.

<i>pa wir taratath</i> water ditch work	March, two Sundays	The ditchworkers ask the <i>kum-pawilawe</i> to make a dance for them that they may enjoy themselves and not feel tired from their work. The dancers come out in two sets from <i>shifumin tulai</i> and <i>shuren tulai</i> , the women dancers joining them outside. A line is formed all around the plaza.
<i>kaani't'ai</i> "our fathers are inside" or (<i>daikwan?</i>)	March	The <i>kaan</i> fast and one night the people go into the houses of the two sets of <i>kaan</i> to be cured. During the four days the <i>kaan</i> make prayer-sticks to take to the fields.
<i>shramōn</i> (Indian) <i>Día de los Ramos</i> (Sp.) (Palm Sunday)	April	After four p.m. boys of 8 to 10 years run relay races in the plaza. As in adult races the close relatives, maternal and paternal, of the winner pay drygoods, food, etc., to the boy who has been caught by the <i>chongo</i> or by the nape of the neck.
<i>kiath</i> (Indian) <i>Birnis santu</i> (Sp.) (Good Friday)	Easter and two following Sundays	Relay races by adults "for Jesus." The round estufa is used and the defeated runner has to clean it out unaided. As much as \$40 worth of goods will be paid to him if the winner is well off. All races are managed by the <i>wilawe</i> and <i>kumpa-wilawe</i> . A large pan of flour, etc., goes to <i>kumpawilawe ch'umida</i> . The races are <i>not</i> run either by clan or by moiety. See "Notes on Isleta, etc.," p. 63.
	Two Sundays following Easter (?)	Communal rabbit hunt for <i>homahode</i> , the two clan heads of the <i>thüt'ainin</i> . Three circles or drives are made and all the kill goes to the <i>homahode</i> . Afterwards each hunts for himself. Women do not go on the hunt.

<i>tiu kyaawe be'amba</i>	June 1-8	Retreats or fasts of clan heads.
north our father goes		Prayer-stick ritual as at winter
(summer solstice)		solstice.

<i>santu marburd</i> (<i>marv-</i>	June 16 or 17	<i>Limosana</i> in money or in wheat ¹
<i>orad</i>)	or	is paid to the priest to say mass for
"saint go around day"	between June	the saint. After mass all start
(Little St. Augustin's	10 and 24	northward, four women carrying
day)		the saint, two in front, two behind.

At the railway track the priest returns; the others go with the saint from farm to farm, all morning, going about that rain may fall (according to one informant not for rain, but for crops and against grasshoppers). As soon as the procession is out of sight of town, the church bells cease ringing. As it comes back into sight the bells ring again that the people may go out to meet the saint. Dance about 6.30 p.m. when the saint is carried all about the village.

San Juan (Indian and Sp.) June 25
(St. John's Day)

About 2 p.m. the church bells ring three times. A group of men gathers and proceeds to visit all the houses where live a Juan or a Juana. Each saint-named person gives a cock or a large round cake also called cock, *gainu* (Sp. *gallo*). The first cock or cake given is carried to the church. In the cock-pulling (*gainutawe*) the cock is buried in the plaza, and the rider who succeeds in pulling it up as he races by on horseback is chased by the other riders who grab at it.

Mexican dancing at night.

¹ At the harvests *premisia* are also paid to the priest—a barrel of corn, a string of chili, six *almoris* or one-half bushel of wheat.

San Pedro *athūwe*
St. Peter's Day

June 29

The church bells ring. Two groups of boys and men carry the banners of St. Peter and St. Paul through the fields. They pull up sprouting corn. One group goes one way, one, the other. When they meet, they whip at one another with big whips. The banner-bearers run off and carry the banners to the houses where live persons named for this saint—Pedro, Petra, Pablo, Paula. Every one of these persons gives *panao'* or sweet bread to be left on the altar for the priest. The corn sprouts are also left in the church. All the time the banners are out there is bell ringing and shooting into the air. It may be that the field parade of banners and the cock-pulling may both take place on both June 25 and June 29—my informants were contradictory.

l'ai puiminai
people doing (?)

Summer

San Agustina (Indian and
Sp.)

Aug. 28

Drought ceremonial.

People replaster the church and the churchyard walls and women whitewash the inside of the church. A bower is built in each corner of the plaza, the two corners nearest the church for the Mexicans, the N.W. corner for Padilas, the N.E. for Paharito, the S.W. corner for Isleta, the S.E. corner for Chikal, the settlement of Isleta people across the River. Under each bower is set an altar. The priest takes out the sacraments, children in veils following him and the people in two lines throwing flowers.

San Agustinito

Sept. 4

Celebration for Chikal where it was formerly held. Indian dancing as at Christmas, in front of the governor's house.

<i>kũmpũr</i>	Sept. 25 or 26	A tablet headdress is worn with
Sp., <i>Pinitu</i>	every three or	eagle feathers fastened to the
Tablet dance	four years.	corners.
<i>shim santu nim tue</i>	Nov. 1	
(<i>shim santu natũwe</i>)		
All Saints feast day		
Todos santos		
(All Saints Day)		
<i>pũana tue</i>	Nov. 2	People take food to the graveyard
(<i>hũyanatũwe</i>)		and light a candle on the graves of
dead day		the dead they know. All is re-
(All Souls' Day)		turned to the priest who sells to
		the Mexicans, making perhaps \$50
		from the transaction.
<i>kurpuatũwe</i>		
Corpus Christi Day		

July–August was noted as a non-ceremonial season because at that time people were busy cutting wheat. Similarly, October was devoted to cutting and roasting corn, and to stringing chili. In field-work the coöperation of relatives appears to be relied upon, and, as elsewhere, your helpers are fed at the end of the day's work in your house.

BIRTH AND NAMING

After the delivery the mother is given a brew of raw egg and cedar (*huñ*) to drink, and on the fourth day she is bathed and her head washed in cedar water. During the confinement of four days she and the baby are looked after both by her mother and her husband's mother. On the fourth day the child is given a name by his mother; but this name is not formalized until the child is taken to the house of the mother's clan heads "to get his name and his corn," *i.e.*, an ear of corn associated with his clan. He has to be taken to this house by the woman attached to the group while they are in retreat—if he is born after June 8 he will be taken during the December retreat, if after December 8, during the June retreat. One name I heard of was Toib'awi (referring in

some way to the growth of corn) and it had been given by the woman's mother. Other names were K'yeku, Erect(?) and G'oa-wa, Cedar; but these names had been given by the child's father's sister. A child is taken by his father's sister to the house of her clan heads, during their retreat also and also during their first retreat after the birth. My informant explained that the advantage in thus getting a name from your father's sister lay in the fact that after you began at the age of fourteen or fifteen to join in the dances she would have to give you presents. The baptism in the church occurs whenever the *madriña* (godmother) is ready for it, having made clothes for the baby. At this time a child gets his Spanish name. When a child is a year old or less he gets his third Indian name—his *estufa* name. Before his birth a friend of his mother may have said to her, "Will you give your child to my husband?" meaning as a member of his moiety, Black Eyes or Red Eyes as he may be.¹ Then during the *pinitu* dance or during the December or June fasts the man, *i.e.*, the ceremonial father, will take the child to his *estufa* to get a name.

As usual, the child's English name is acquired at school.

A woman at marriage does not take her husband's name, either Spanish or English.

MARRIAGE

The following account is obviously Mexican.² To what extent, if any, native forms may be observed I had no opportunity to learn. . . . "Unlike Laguna people," said my informant, it is the boy who asks for the girl. He writes a letter and a man (*aolio-pinii*, bride asker) takes it to the girl's parents. By this letter the suitor is "asking for the door," *pidir un puerta* (*unahiliamirivan*). Thereupon the girl's parents summon all her relatives, near and distant, and before them ask her if she will accept the suitor, but even were she to refuse, they might force her into the marriage. (She is, we may note, very young. Like other girls my informant

¹ Membership in the Zuñi *estufa* or in the Hopi ceremony, which is part of the general initiation of boys may be planned for in the same way.

² And yet it has curious resemblances, likewise, with the Hopi marriage celebration.

had married at fifteen.¹ Her husband was twenty.) If the parents themselves refuse, some time within four days they must send the suitor a letter of refusal. ("They pumpkined him," *le dierun calabaza*—Indian *apawechevan*.) In accepting the suitor no letter is sent, silence giving consent, and on the fourth night all the groom's relatives come to the bride's house where they are feasted. Four days later the groom's relatives again go to the bride's house to be feasted. Two days after that visit the bride's parents have another letter written to give to two or three relatives to take to the "bride asker." In this letter "they gave him the wife," *le dierun mujer* (Indian *aliuwechiban*). The letter carriers are feasted by the bride asker and he and they go on together to the house of the groom's parents for another feast. The following night the groom's relatives go to the bride's house, taking with them the *padrinho* and *madriña* of the wedding (the *padrinhos*, people say)² in order to appoint the day. This is the last of the *visita* (Indian, *naliopuñ*). A week may elapse. Meanwhile the groom goes out to the mountains and the sheep camp to fetch in to the bride's house three or four wagon loads of wood and some sheep. The night before the wedding the groom's relatives bring to the bride a trunkful of clothes, and the bride's relatives send him, too, some clothes. On the wedding day before going to the church the couple kneel and an appointed man hangs around the bride's neck a necklace (*prenda*, present) given by the groom, and around the groom's neck a necklace given by the bride. A blessing is said. All go to the church, the bridal party in single file, first the *padrinho*, then the groom, then the *madriña* and last the bride. On the return, also in single file, the order is *padrinho*, groom, bride, *madriña*. During the church service, or perhaps two or three days later in the church, the priest's stole is drawn across the shoulders of the couple—providing the bride is not a widow.

¹ Indian women stay young looking, she thought, because they marry so young and the babies follow in quick succession. My informant was twenty-five and looked thirty-five. Her fact and theory did not correspond, and I questioned her power of observation even more when she guessed me to be twenty-seven or eight.

² The respective parents being, of course, through baptism and wedding, either *cumpairi* (*compadre*) or *cumairi* (*comadre*) to one another.

After the service, congratulations and shooting off guns are in order. There is a big crowd, for all the relatives of the *padrinho* and of the *madrinha* as well as of bride and groom are present. There are three tables, and the couple and all the guests must sit at each in turn—at the *madrinha's*, at the table of the groom's parents, at the table of the bride's parents. In conclusion the groom's parents and the *madrinha* carry home their table and service. The groom remains at the bride's house. After two or three days the groom takes the bride to his parents' house and in a week or so the couple goes to live in their own house.

As elsewhere among the eastern Pueblos, the house may belong to either woman or man, not, as in the west, exclusively to the woman. My informant, a woman, owned a house which she had inherited from her mother's mother. After her grandfather's death, as a child she went to live with this grandmother. Her mother, on the other hand, lived in her father's house. But it is her mother who owns the fields in the family. Her mother, an only child, inherited several fields, and her father sold his own field in order to look after her mother's fields. Offspring inherit fields or house equally. Formerly if there were no offspring, the property of the surviving spouse would be claimed by his or her mother or family. In recent years there have been lawsuits about this and now the surviving spouse inherits. It is a change which in all my informants prompted the expression of ethical opinions, an expression somewhat rare on the part of Pueblo Indians. . . . On divorce the property is divided between the man and the woman, according to their original title to it. How much divorcing there may be I had no opportunity to learn. An informant knew of four families where man and woman were living together without the legal, *i.e.*, American divorce which was in order.

BURIAL

Until about five years ago the dead were buried in the churchyard. The head of the corpse is to the south so that the dead, according to one informant, might rise and enter the church. Of interest in this connection is the fact that people are averse to

sleeping with their heads to the south just as at Zuñi, Acoma, and Laguna, where the burial is head to the east, people will not sleep head to the east. The burial is the day after the death. Water is poured over the grave, and the jar is brought home. Four days after death a bowl or pan of food together with the cup, saucer, or spoon of the deceased and a ring or bracelet which is broken are left out at night, back of the village, on the side where the deceased lived.

NEW YORK CITY

A NOTE ON AESTHETICS

BY ROBERT H. LOWIE

WHILE attempting to determine the artistic style of Crow parfleches as compared with that of other Plains tribes, I hit upon the notion that it might be desirable to apply some of the methods in vogue in experimental aesthetics. Circumstances prevented me from carrying these inquiries very far. Nevertheless, I feel it may be worth while to record my measurements in the hope that they may stimulate others to make corresponding observations on a larger scale and particularly to undertake relevant investigations in the field.

Gustav Theodor Fechner, the founder of aesthetics as a branch of exact psychology, endeavored to determine what forms of a particular geometrical category were deemed most pleasing. For this purpose he employed three methods,—that of having his subjects choose from a series of, say, rectangles the most aesthetic samples; that of having them construct the desired forms; and that of noting objectively what forms predominated in actual use. Since the decoration of parfleches consists for by far the greatest number of instances of simple geometrical figures, it seems to present an excellent opportunity for applying Fechner's principles, though in the study of museum material the first two of his methods are of course excluded.¹

Inquiries of this sort have an ethnographic no less than a psychological interest. A priori it is indeed possible to assume that in respect of the simpler geometrical figures a single aesthetic norm is common to all mankind,—say, the principle of the "golden cut" examined by Fechner, according to which the ideal rectangle has sides bearing to each other the ratio of $1 \pm \sqrt{5}$ to 2, the lesser

¹ Those interested may be referred to G. T. Fechner, *Vorschule der Aesthetik* (Leipzig, 1876) and Ch. Lalo, *L'esthétique expérimentale* (Paris, 1908).

having a length approximately 61.8 per cent of the greater. But it is far more reasonable to expect certain differences in the aesthetic canons accepted in different regions. And if this anticipation were verified, we should have an additional set of features for differentiating cultures. What is more, by pursuing such studies it becomes possible to define existing differences with greater nicety: instead of contenting ourselves with the remark that one region favors an angular and the other a curvilinear style of decoration we may succeed in determining objectively that one tribe prefers a rectangle of one type, a neighboring tribe a rectangle of another type.

But the matter is not quite so simple as this formulation might suggest. After one has handled a fairly large number of specimens from a single group it becomes clear that the preferences are not clear-cut and absolute. For example, we cannot say that the Crow use, say, isosceles triangles for the simple reason that even the same bag may be painted with right-angled as well as isosceles triangles; and the latter again may vary enormously in their aesthetic character according to the angle enclosed by the equal sides. It appears that the aesthetic value of a simple form is affected by its position in the decorative field: what is proper in a marginal area may be taboo in the middle, and so forth.

In order to avoid the pitfalls just hinted at I decided to compare the parfleches of the Shoshoni with those of the Crow as regards a single figure in the same position, to wit, the rectangle in the center of the decorative area. The central rectangle has been rightly noted as a trait characteristic of the Shoshoni parfleche, though it is by no means found on all Shoshoni specimens.¹ This feature is to some extent shared by the Crow. That it has a single origin historically cannot be doubted considering the geographical position of the tribes concerned and the lack of this motive on the parfleches of most other tribes. The question, then, is whether the borrowing tribe has transmuted the borrowed feature in consonance with its own aesthetic predilections and wherein such modifications consist.

¹ A. L. Kroeber, "Ethnology of the Gros Ventre," *Anthropological Papers, American Museum of Natural History*, vol. 1, p. 172 (1908).

So far as I know, the two flaps of a parfleche invariably bear the same ornamentation and it is plausible to assume that they are meant to be identical. But whatever may be the artist's ideal, she frequently departs from it as regards the dimensions of her figures. In some instances, indeed, the discrepancies proved decidedly startling. I also found that the parallel lines of the same rectangle were not always equal in length but sometimes varied in appreciable measure. Accordingly, in establishing my ratios I measured all the sides and averaged those determining the same dimension. Since in the majority of cases there is a frame round the central figure, this provided an additional rectangle for each flap, so that the number of ratios for any one parfleche is usually four. The shrinking of the rawhide and the partial obliteration of some of the lines make exact measurement difficult in some of the specimens, but of course the minor inaccuracies due to these causes are negligible for present purposes. Only in one case were certain lines so completely effaced that measurement was impossible.

In the following tables the fractions designate the specimens as registered in the catalogues of the American Museum of Natural History. The absolute measurements are given in millimeters, those relating to the parallel sides of the same rectangle being paired.

It would of course be vain to draw any far-reaching conclusions from the small number of cases available for comparison. If I venture to broach the subject, it is because it provides a valuable method for field-workers, which I hope they will not neglect. It is not always practicable to purchase large series of museum specimens, but few natives would object to having the figures on their rawhide bags (or other objects bearing designs) measured by an ethnological visitor. I certainly feel confident that had I been alive to this mode of research at the proper time I could have secured an imposing array of data on Crow parfleches that would have definitely decided the closeness of their kinship with those of the Shoshoni.

I will assume that the samples of ratios supplied by my two

SHOSHONI

Specimen	Width	Length	Ratios
<u>50.1</u> 883	97.98 88.89	138,139 136,138	69.3 65.4
<u>50.1</u> 1166	202,197 172,160 210,200 172,183	303,300 269,270 299,295 263,267	66.2 61.5 69.0 66.8
<u>50</u> 2299	160,159 175,170 131,130 148,140	263,265 282,294 231,225 250,250	60.6 60.1 57.0 57.6
<u>50</u> 2346	161,150 124,114 153,145 95,100	210,205 183,176 191,196 160,161	74.9 67.0 67.2 60.6
<u>50</u> 2300	154,154 133,136 175,175 145,145	246,244 222,220 283,290 260,259	62.8 61.1 60.9 55.3
<u>50</u> 1179	175,173 183,180	208,204 190,200	84.4 93.3

CROW

Specimen	Width	Length	Ratios
<u>50</u> 6855	147,143 102, 97 149,148 111,108	245,249 206,207 222,221 180,182	58.7 48.3 67.1 60.7
<u>50</u> 1774	130,120 97,102 120,133 97,105	145,149 117,114 157,157 121,125	85.0 86.2 80.2 82.1
<u>50</u> 6846	112,124 90, 80 121,113 86, 78	224,228 190,189 217,223 177,181	52.2 44.7 53.2 45.8
1	8 8 7 6	12 14 9 11	66.6 57.1 77.7 54.5
1	10 9 8 8	17 17 13 15	58.8 52.9 61.4 53.3

¹ This specimen was photographed in the field and the proportions calculated from the negatives. Owing to the small size of the measurements obtained, differences between parallel lines are ignored here.

small series are typical and will collate the data in a table of distribution, uniting percentages by fives.

Ratios	Crow	Shoshoni
40-45.....	1	
45-50.....	2	
50-55.....	5	
55-60.....	3	3
60-65.....	2	7
65-70.....	2	6
70-75.....	0	1
75-80.....	1	1
80-85.....	3	1
85-90.....	1	0
90-95.....		1

The fact that the number of Crow cases above 80 is twice that of the Shoshoni is readily explained when we remember that the Crow piece in question has a framed rectangle while the excessively broad Shoshoni parfleche is frameless. Few as are the ratios, all the data consistently point in one direction,—a preference of the Shoshoni for relatively wide rectangles in the central position. The narrowest Crow rectangle is much narrower than the narrowest Shoshoni one; the broadest Shoshoni rectangle is broader than the broadest Crow rectangle; the Shoshoni prefer quite decidedly the ratio of from 60 to 70, the Crow the ratio of from 50 to 60. On the basis of these figures the Shoshoni norm would fall somewhat above and the Crow norm somewhat below Fechner's ideal rectangle.

I have already indicated that I attach to these findings a merely tentative and suggestive value. Of course comparison should not be restricted to rectangles in a particular position but must be extended to other forms, say, the diamonds or hour-glass figures that are so prominent in the rawhide decoration of Plains Indians. A comprehensive inquiry of this sort is bound to yield interesting results for it will be as important to ascertain that there is practical unity of aesthetic reaction to geometrical forms as to determine tribal differences.

AMERICAN MUSEUM OF NATURAL HISTORY,
NEW YORK CITY

AN UNUSUAL GROUP OF MOUNDS IN NORTH DAKOTA

BY GEORGE F. WILL

DURING the summer of 1920 a new group of mounds was reported to the North Dakota Historical Society. It was recently examined by Dr. Gilmore of that organization and the writer.

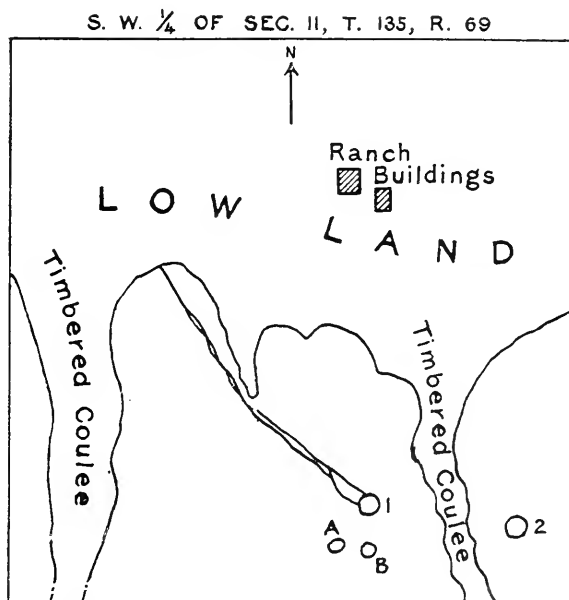


FIG. 27.—Quarter-section S. E. of Streeter N. Dak., showing group of mounds. Scale 880 ft. to 1 inch.

These mounds are located about twelve miles south and east of Streeter, N. D., on the southwest quarter of section 11, township 135, range 69. Similar mounds have been reported from the James and Sheyenne River valleys, but so far none of them have been described. These mounds also bear a resemblance to mounds south of Bismarck, N. D., near Apple Creek,¹ which were described in a paper for the *Anthropologist* some years ago.

¹ *American Anthropologist* (n. s.), vol. 13, no. 4 (Oct.-Dec., 1911), pp. 585-588.

The location of the mounds is in a rather beautiful and unusual spot for this part of North Dakota. They are placed in the very heart of the Coteau du Missouri on the top of a promontory jutting out from the highest range of hills in the region. This promontory is cut off both to the east and west by deep, timbered draws or coulees containing numerous large and very fine springs. We were told that this area hereabouts contained the only timbered coulees to be found for a great distance in any direction, a fact which doubtless has strong bearing on the location here of the various features to be mentioned.



FIG. 28.—View to north from top of mound 1.

A rough map of the site is presented herewith (fig. 27) and the various features will be taken up in detail, references being made to the map and photographs. A general view looking north from mound 1 gives an idea of the height and wide outlook from the top of the promontory, and shows part of the timbered coulee along the east and north (fig. 28).

Mound 1, as the most important feature of the group, will be taken up first. The map shows its location on the nearly flat top of the promontory which slopes gently to the northern edge where it breaks abruptly into steep bluffs cut by deep washes. This mound is about forty feet in diameter with a height of from eight to nine feet at its center. Running a trifle west of northwest from it is a plainly marked, wide approach with a very gradual descent. This can be clearly seen in the view looking south toward the mound where the approach shows on the right-hand side. This

ridge extends very clearly for about two hundred feet. The width is about twenty-four feet at the base of the mound and gradually narrows as it recedes. From a point two hundred feet from the

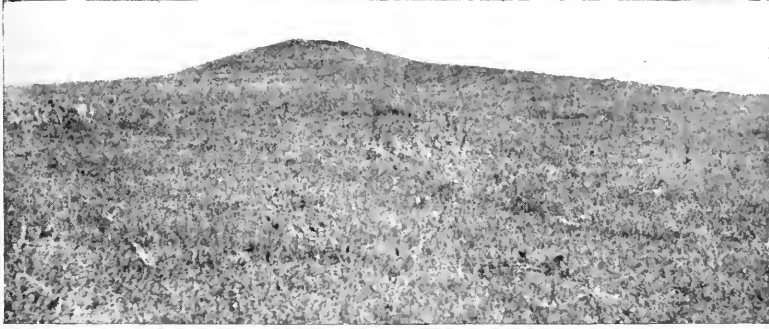


FIG. 29.—Mound 1, from the north.

mound it runs as a narrow, rather indistinct, but continuous ridge, with a slight bend at the head of a draw nearly an eighth of a mile to the bluff edge as the map shows. The direction from the mound is just about that of the setting sun at its farthest north point in June.

This mound had been partially excavated by the parties who had reported it. A round hole about seven feet across and six feet deep

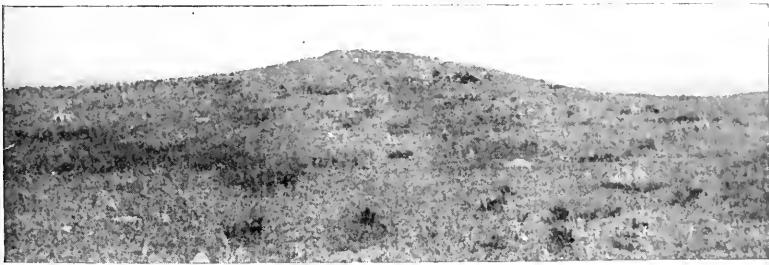


FIG. 30.—Mound 1, from the south.

had been dug at the center of the top. At a depth of five feet they stated that they had found the skeleton of a child which they believed to be about seven years old. The bones were somewhat mixed up, with many of them missing. They were inspected and seemed to be in a fair state of preservation although they were reported as very soft and crumbling when taken out.

Most of this mound is composed of the gravelly soil of the vicinity but there are a number of pockets and layers of wood ashes and also pockets of bone fragments with whole small bones, some of birds but mostly of buffalo. No depression showed in the vicinity from which the dirt of the mound might have been taken, so it seems probable that the earth was carried some distance. Pictures of the mound are shown from both the north and south, giving a good idea of its shape and of the approach (figs. 29 and 30). A good many flint chips were found in the mound, but no other artifacts.



FIG. 31.—Mound 2, marked with a cross.

Across the deep coulee to the east from the first mound is another large mound, mound 2, as shown on the map. A picture of it is also shown, the picture being taken from the top of mound 1 (fig. 31). Mound 2 has never been disturbed by excavation. It is nearly circular, with no approach, and has a diameter of about sixty feet, with a maximum height of seven to eight feet at the center.

A short distance south of mound 1 are two low mounds marked *A* and *B* on the map. These are about two and one half feet high at the highest points, with a diameter of forty feet for mound *B*, *A* being slightly smaller. They are hardly distinguishable in the photograph looking south from mound 1 (fig. 32); neither has been disturbed.

In addition to these clear features the ground over the whole

promontory seems to show signs of more or less disturbance long ago, with a number of very indistinct rings from twenty to thirty feet in diameter and with one almost rectangular shallow depression some distance to the north of mound 1. The ground has not been plowed or disturbed in any manner within recent years.

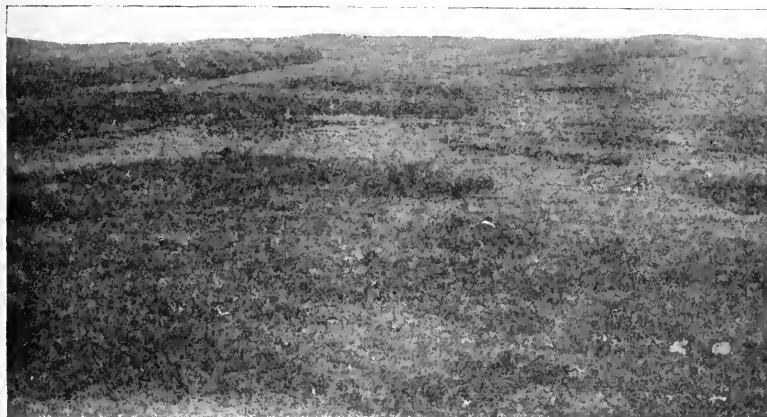


FIG. 32.—View to south from top of mound 1.

The fact that the location of this site is unique in the matter of the presence of both timber and water, which are to be found nowhere else together for a great distance in any direction, serves to connect it in the mind with the tradition of a Cheyenne Indian village temporarily established in the hills of the Coteau du Plateau du Missouri not far west of the present town of Kulm, N. D. This site is some eighteen or twenty miles northwest of Kulm, and the only location where timber is to be found. The only drawback to the theory that this might be the Cheyenne site is the absence, so far as observed, of potsherds. As has been said, flint chips and flakes were found in the excavation of the mound, but absolutely no potsherds. The excavation for the whole site has, however, so far been very slight and more careful investigations might easily show pottery fragments. In any event it might be well to consider that suitable pottery clay is hardly to be found in this region, and such articles of pottery as the people may have been able to carry in their flight from farther east would have been used with extreme care.

BISMARCK, N. D.

THE NEED OF ARCHAEOLOGIC RESEARCH IN THE MIDDLE WEST

By FREDERICK HOUGHTON

ARCHAEOLOGIC fieldwork in western New York, northern Ohio, and southern Ontario has accomplished two definite results. First, it has established the characteristics of Iroquoian culture for those areas; it has differentiated this culture from the non-Iroquoian culture of the same areas; and it has differentiated the cultures of the Seneca, Erie, and Attiwandaron members of the Iroquoian family. Second, it has shown conclusively that these nations were not autochthonous in that territory but had entered it by migration, and that this migration was from the westward.

Systematic attempts to determine the migration paths of the Senecas have resulted in tracing backward their migration from their historic seats in the Genesee country of New York southward and westward until their culture merges with an earlier culture at about the longitude of Erie, Pa. The Eries have been traced backward from a post-European site in the southwestern corner of New York to a prehistoric site at Willoughby, near Cleveland. The Attiwandarons have been traced back from post-European sites on the Niagara frontier, the Grand River, and at the head of Lake Ontario, to early prehistoric sites at St. Thomas and London.

The attempt to trace these migrations westward beyond the points mentioned has not failed because of any lack of material evidences of their culture beyond those places. It has been stopped by the difficulty of obtaining authentic information about the archaeological remains beyond, and the difficulty, almost amounting to impossibility, of one observer attempting to examine, in the detail necessary, the wide extent of territory which encircles the head of Lake Erie from Cleveland to Detroit and eastward to London, Ontario. Besides, there is the possibility, nay the probability, that evidences of these migration paths, manifested by ar-

chaeological remains of Iroquoian origin, exist in the territory west of the head of Lake Erie. That such evidences do exist is shown by the discovery and publication by Mr. Langford of a site on the Kankakee River which has every characteristic of a pre-European Iroquoian site.

To follow up this attempt to solve a very definite archaeological problem there is badly needed some accurate information about the aboriginal village sites located in northern Ohio west of Cleveland, the Canadian peninsula west of London, and a rather narrow tract of northern Indiana and Illinois and southern Michigan.

To supplement and complete this there should be accurate information about the character of the artifacts found on these sites. In that portion of Ohio lying contiguous to Lake Erie and in the western portion of the Ontario peninsula there should be numerous village sites not yet listed, and from some of these there will undoubtedly have been collected artifacts of unmistakable Iroquoian origin. Similarly in the territory west of the Detroit River there are numerous sites known only to local collectors, and it is at least possible that in some of the collections gathered from these unlisted sites there are artifacts of Iroquoian origin which, if available, might add data bearing upon the migrations of these nations. It is only by listing these sites and the artifacts taken from them and determining those of possible or undoubted Iroquoian origin that the problem of the migrations of the Iroquoian nations can be solved.

Recognition of the Iroquoian culture is easy, for its characteristics are well marked. These are: deep refuse heaps in which are numerous animal bones and pottery fragments; a large proportion of artifacts made of bone and antler rather than of stone; tiny, keen, well-made, triangular chert arrow points; and round-bottomed clay kettles decorated with a band of triangles filled in with parallel lines, constituting the well known "chevron pattern." Any site showing these characters may safely be considered of Iroquoian origin.

There is another migration problem which might be solved at the same time. This has to do with the origin of the Wyandots.

In the decade between 1645 and 1655 the New York Iroquois

devastated the country of the Hurons, the Tionontadis, and the Attiwandarons, all kindred nations of the Iroquoian stock. As a result many of these people were killed, many perished as a result of privations, and many more were deported by the Iroquois to their towns in middle New York. Yet a large number survived and migrated. The Jesuits at Quebec reported in 1653 as follows:

All the Algonquin nations are assembling with what remains of the Tobacco Nation and of the Neutral Nation at A'ontonatendie, three days' journey above the sault Skia'é toward the south. Those of the Tobacco Nation have wintered at Tea'onto'rai; the Neutrals to the number of 800 at Sken'chio'e toward Te'o'-chanontian; these two Nations are to betake themselves next autumn to A'otona-tendia where even now they number a thousand men.¹

The Tobacco nation were the Tionontadis. The Neutral nation were the Attiwandaron. The Sault Skia'e were Sault St. Marie Indians, and Skenchis was on the west shore of Lake Huron, probably at the entrance to Saginaw Bay.

There seems every reason to believe that the Wyandots of the next century might have been formed by the fusion of these expatriated kindred refugees. If this be so there should be evidences of post-European Iroquoian villages marking their movements from northern Michigan to the region about the Detroit River.

BUFFALO, N. Y.

¹ Jes. Rel., Thwaites ed., XXXVIII, p. 181.

ABORIGINAL SITES IN AND NEAR "TEAOGA,"
NOW ATHENS, PENNSYLVANIA

By LOUISE WELLES MURRAY

PART I

INTRODUCTION

THE tendency of the intelligent student of history or archaeology today seems to be to require more facts, more particulars. Curiosity has ever led man to gather and preserve unusual or mysterious objects, which often are assembled in museums. Today it is a recognized fact that museums have a great educational value, and the student views a collection for what it *means* rather than what it *is*. Archaeology has taken vast strides, and the search for Indian artifacts without making written records is considered vandalism. The skilled archaeologist deplores the fact that sites have been "dug to death" when they might have been "dug to life for the benefit of science."

Since the accidental discovery in 1882 of an Indian burial site in the writer's garden many questions, not easy to answer, have arisen. It was, and still is, evident that, if Pennsylvania were as well organized for archaeological research as New York, or had been as completely dug over as Ohio, some at least of the questions might have been answered. For more than a quarter of a century we have struggled toward the light, studying museums and private collections, seeking the acquaintance of archaeologists, reading all available literature, endeavoring to fit statements and theories to what is self-evident in this locality. Forced to accept the idea that this is a neglected "transition area," we agree with Hanna, author of *The Wilderness Trail*, that "the field of Pennsylvania archaeology is still practically unbroken," and this seems especially true of the valley of the Susquehanna.

Our first study, nearly twenty-five years ago, was with Gen. John S. Clark, a student of Indian occupation of the upper Sus-

quehanna, then an accepted authority both in New York State and in Pennsylvania, although today some of his conclusions are criticised and even discredited. He said to me: "Teaoga has been occupied, or frequented, by aborigines as long as they have lived on the Alleghany Range; remains have been and will be found reaching back a thousand, if not thousands, of years of all nations and languages, friends and enemies. I hope you will unravel some of the secrets." In company with the historian, the Rev. David Craft, Gen. Clark made surveys from the state line to Wyoming Valley before the canal and railroad had cut away many evidences of aboriginal occupation. Therefore we believe his work should be given scientific acknowledgment.

Of late years so much attention has been given to the historic Iroquois that their predecessors hereabouts have not always had consideration, largely from lack of criteria. Inspired by Gen. Clark, and by continued finds in our immediate vicinity, we have endeavored to assemble in our local museum a collection representative of the various cultures here evident. While it was long since acknowledged "difficult to distinguish the web of conflicting evidence respecting the nationality of the Indians who from time to time have occupied the soil of Pennsylvania" (Egle), it is acknowledged that Teaoga must ever have been a strategic point, by reason of the junction here of the Chemung and Susquehanna Rivers. Holding the key, as it were, to the territory north of Pennsylvania, it was a natural watch town where many important Indian trails converged.

Inspired by some recent monographs from the pen of Mr. Alanson Skinner, also by the results of the research of the Lewis H. Morgan Chapter of Rochester, we hope, by a survey of the material in Tioga Point Museum and all available private local collections, to furnish additional criteria concerning the prehistoric occupation of the middle section of the main Susquehanna and its tributary, the Chemung. While the culture was inferior to that of the Iroquois, there is considerable to be admired, and we are not quite ready to agree with the suggestion that the river played a more important part in historic than in prehistoric times. We believe from various indications that Teaoga was a permanent center, or at least

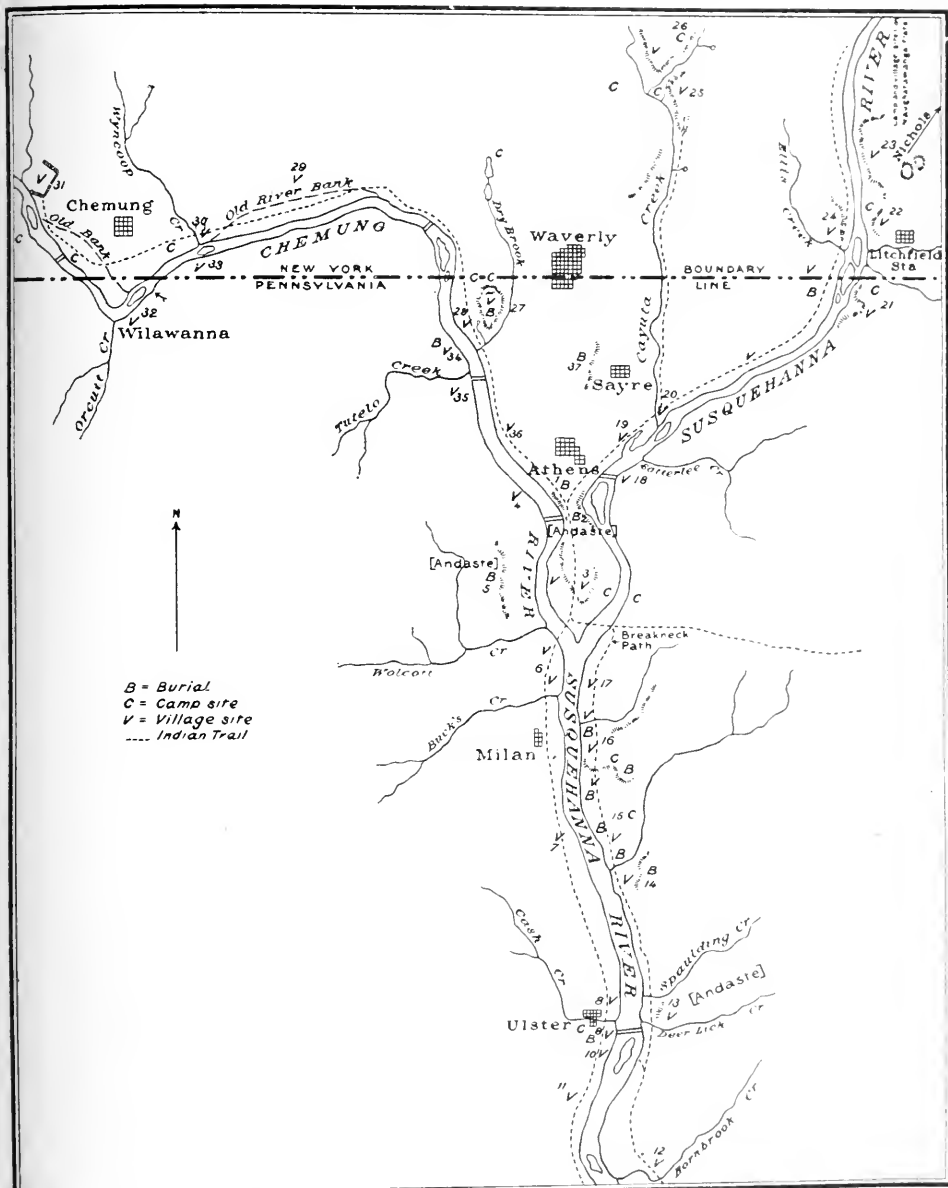


FIG. 33.—Sketch map showing aboriginal sites in the region of "Teaoga," now Athens, Pa.

a rallying point, during many periods. Many of the sites long supposed to be detached prove to be connected, and in several instances—always along the river—show repeated occupancy at different periods, at different levels, and by different peoples. Two or three terraces are plainly visible along both the Chemung and the Susquehanna Rivers in this valley, each often showing a different culture. These streams are subject to severe floods several times a year, uncovering in some places unsuspected sites and burying others more deeply in silt.

The region covered by our proposed survey, shown on the accompanying map (fig. 33), is about ten or twelve miles square, with mention of a few sites more distant. While overlapping the New York State line at the north, it is a territory little described on the printed page. Without special training, we propose to give the results of explorations of various collectors, depending on illustrations to assist in the progress of knowledge along archaeological lines. Such data as we had already published¹ now seems indefinite, incomplete, and in some instances inaccurate. In this work we have been assisted by Percy L. Lang, Ellsworth Cowles, Paul F. Scott, and a number of other local collectors, from whose observations we have made careful notes. We have also had counsel and advice from Alanson Skinner, Arthur C. Parker, Dr. Beauchamp, Alvin H. Dewey, and Christopher Wren.

Traces have been found of cultures of different periods—archaic Algonkian; Andaste or archaic Iroquois; late Algonkian with Delaware predominating but possibly including Shawnee; later Iroquois, including many tribes that had become subject to them such as the Siouan Catawba and Tutelo. While there are indications of occupation even earlier than the archaic Algonkian, evidences of early and late Algonkian and Andaste or archaic Iroquois predominate in this locality; and in historic times it is evident that small groups of southern tribes conquered by the Iroquois had at least transient settlements here. Considerable data is available as to Algonkian culture, and Algonkian sites are easily identified by the long pestle, steatite dish, chipped grooved axe, stemmed and notched points, ceremonial and "problematical" artifacts of early days, and later

¹ *A History of Old Tioga Point and Early Athens, Pennsylvania.* Athens, Pa., 1908.

their special types of pottery, by no means weak in decoration, as is noted elsewhere. But for long years we have wondered if the large skeletons from our own garden and the unwieldy implements found there and on some neighboring sites did not indicate the same race as that described by Capt. John Smith in relating his encounters with the mighty Sasquesahannock in 1608. A careful study of old maps, of the writings of Champlain, Parkman and some Jesuit Relations, and the surveys of Gen. Clark encouraged us in this belief, first awakened by an erudite friend in 1896. Unquestionably Capt. Smith's Indians were one with the Andaste, the least known inhabitants of the valley of the Susquehanna and the last, because the most powerful, tribe to resist the onslaughts of the famous Iroquois, to whom, however, they were related. We believe this people made their last stand within the confines of Bradford County and along the state line. Their villages extended from Spanish Hill to Wyalusing and possibly a little farther south, and it is recorded that the last battle was at Wyalusing. In somewhat recent years our theories have been substantiated. The burial sites at Athens, on our own property, have furnished the best known artifacts for the study of the culture of the Andaste, or archaic Iroquois, and are to be found in the museums of the Wyoming Historical and Geological Society at Wilkes-Barre, of the American Indian, Heye Foundation, New York City, and our own of Tioga Point. These include skeletal remains, often indicating men six feet and more in height,¹ and pottery with certain distinctive characteristics such as the deep collar, yet closely related to that of the Erie or Neutral group of the Central Iroquois, all coil-made, the clay tempered with burnt stone and pounded shell, and varying in size from the toy of a child to the great burial urn of a chief. All pottery was found in or associated with graves. Celts, chipped and polished, were of varied materials. Arrow points, usually of flint, were of the characteristic Iroquoian type, triangular. There are no bird-stones or banner-stones and few pipes;

¹ The size of many skeletons found hereabouts has been a matter of wonder for the last thirty years. While no competent specialist has checked them up, the unusual size led us to have a physician who had made a special study of anatomy examine many of the skeletons from Site 2. After measuring these he said, "They must have been seven feet tall."

but to whom but mighty men belong the large chipped tomahawk, the unwieldy pestle, and the grooved axe 13 inches long? Other artifacts may best be described in our survey.

DESCRIPTION OF THE SITES

Let us then journey from site to site—a seemingly more definite method than chronological consideration—starting at Site 1 on the map, the Spalding Memorial Library Building, the home of Tioga Point Museum. This spot was the known camping ground and rendezvous of the red man from the period of the French and Indian wars; but it was not until 1897 that evidence was found of the long-used camp or village site, and close by two burial sites, one beneath the other, discovered by laborers when excavating for the cellar of the present building. Since they were working under contract, with no skilled investigator at hand, no doubt valuable data were lost.

The upper burials were about two and a half feet from the surface, the lower eight feet below. Under one of the lower burials was a bed of ashes with crushed pottery, shells, very crude points, pronounced palaeolithic, deer bones and antlers, indicating a kitchen midden or refuse pit of great age. Later, while grading the lot, many graves were found which have never been fully excavated, but a few were carefully examined and the skulls, bones, and implements taken from them are now in the Museum. Close to the edge of the high bank along the Chemung River two skeletons were found in one grave, flexed and buried in a sitting position, very close together, one facing east and one west. With them was pottery, a broken chisel, possibly double-bitted and 8 inches in length, crude knives, stemmed and barbed points, broken ceremonial celts and small black ones, seemingly all Algonkian. (See fig. 34). The pottery, however, varies in size, shape, and decoration, and is pronounced by experts to be of three distinct types, indicating this to be a mixed site. Nearly all the vessels were broken before burial, which, as indicated later, was somewhat usual in this locality. Hammer stones, hoes, mullers, sinkers, shells, and deer bones complete the list of remains here found. There were no pestles, mortars, or lapstones, but many firestones

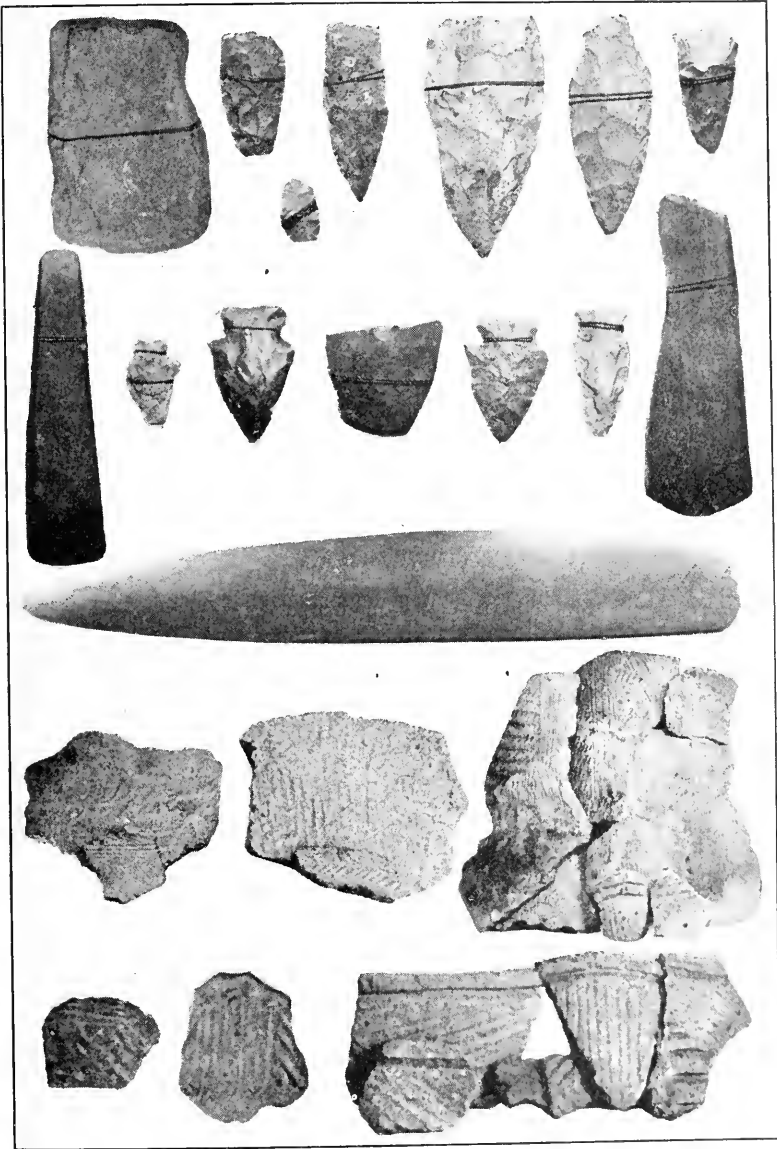


FIG. 34.—Objects from the Museum site, including potsherds of different cultures and a finely executed chisel.

and every indication of long-continued fires inside of two circles 30 feet in diameter and 50 feet apart—apparently century old lodge sites. The whole of the narrow neck of land north and south of this site, about one-half mile in extent, seems to have been a burial place at different periods, for within a few hundred feet of each other are graves distinctly Algonkian, Andaste, and Iroquois. In what is now the main street, just below the Museum, in laying water pipes four feet underground twenty years ago, were found some very large skeletons, one of which was carefully examined and described as

a man of gigantic size. Judging from the thigh bone, 21 inches long, he must have been seven feet tall. The skull was much larger than usual, very thick, the forehead unusually receding and the top flattened. The jaws were extremely strong, full of large perfect teeth. Altogether the remains seemed to be those of a brutal and very powerful giant. A few small flints and a rude flint axe head were found, and in other graves close by several broken pots.

Although most of the bones crumbled, the femur above mentioned, together with the jaw and teeth, are in the Museum, also the artifacts and pottery shown in *Old Tioga Point* (page 205). Passing by these graves, one of which had a noticeable headstone (now in the Museum), a few rods farther south is Site 2, the writer's garden, where between 1882 and 1896 were found 29 graves, 28 pots, whole when buried, and some other artifacts and ornaments described in *Old Tioga Point*, and in several volumes of the *Proceedings of the Wyoming Historical and Geological Society*. However, some details are here repeated, as after the investigations of the Susquehanna Archaeological Expedition all along the river, Mr. Alanson Skinner confirmed our own conclusion resulting from years of study, that this was an Andaste cemetery, yielding, in connection with other finds hereabouts, the first evidence of the culture indicated in Capt. John Smith's narrative of three hundred years ago. This "Murray garden" burial site, discovered by workmen in digging a drain, was an oblong plot, 80 by 30 feet, with a carefully arranged grave in the center, on a high bank of the Susquehanna. It yielded skeletal remains of twenty-five males, one child, and three females, each of the latter buried shoulder to shoulder with a male. Several skeletons examined by students indicated a height of above six and

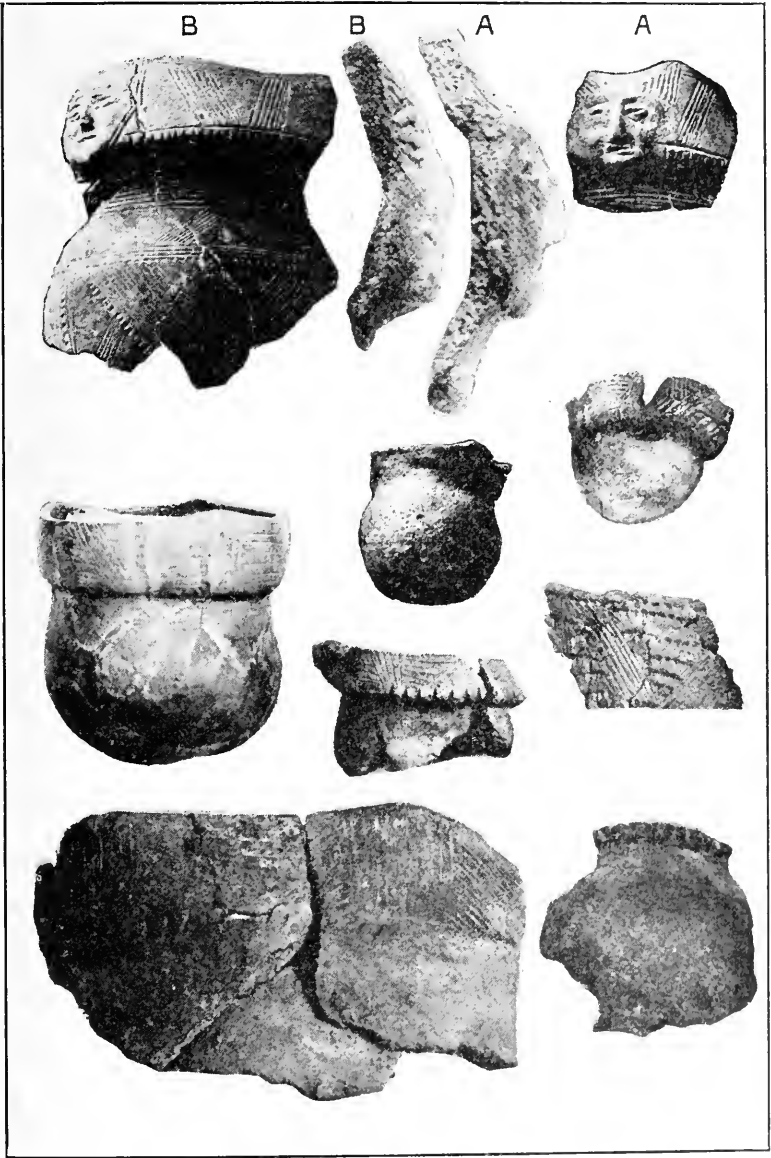


FIG. 35.—Andaste pottery from the Murray garden; reduced to about one-fourth.
A, A, B, B, fragments of pot ornamented with faces.

a half feet. The graves were grouped somewhat regularly around the one in the center which was marked with such care that it was believed to be that of a chief surrounded by members of his clan. This burial site accidentally discovered was on a previously unoccupied village lot. The workmen unearthed three skeletons buried so close together as to indicate one grave. But it was the pottery that attracted most attention; and in all the museums we have visited we have yet to find faces more artistically executed than those on one of the five pots, all of which were broken in removal. (See fig. 35). While we reproduce only the faces, enough fragments are preserved to show unusual all-over decoration of lines, dots, and finger-nail imprints. Apparently the pot was about eight inches in height and twenty in circumference. The upper edge of the two-inch frieze was finished in four curves, those on opposite sides each having one of the relief faces, distinctively male and female. There were also found four celts of different materials and workmanship; a discoidal or game stone with a rough etching, possibly of a hafted celt; a gorget made from a marine shell, possibly nautilus; a unio shell cut to a sharp point, evidently used as a tool; and two pestles, one large and unwieldy but easily used by the big men here buried. There were many large drift stones in these and later-found graves though not used as lining, and over one skeleton was a large, flat stone, an inch thick, showing much use for household purposes. All of these are now in Tioga Point Museum.

The workmen's find attracted the attention of members of the Wyoming Historical and Geological Society, who asked the privilege of making further excavations, a request carelessly granted as an occasional grave had often been found in lower Athens. Harrison Wright and S. F. Wadhams came in April, 1883, measured off the plot in twelve-foot intervals from the original grave, and began excavations. While, as afterward proven, they did not exhaust the contents of the cemetery, test holes at intervals of twelve feet all over the garden brought surprising results. Mr. Wright's original map and notes were given to us and are here reproduced for the first time (fig. 36). Thirteen graves were found, and from the end of the first half-hour a rich harvest was gleaned for the Wyoming Museum, something being found with every burial. In the

first grave was a skeleton above the average height, buried in a sitting posture, with turtle-shell rattles in good condition and four small

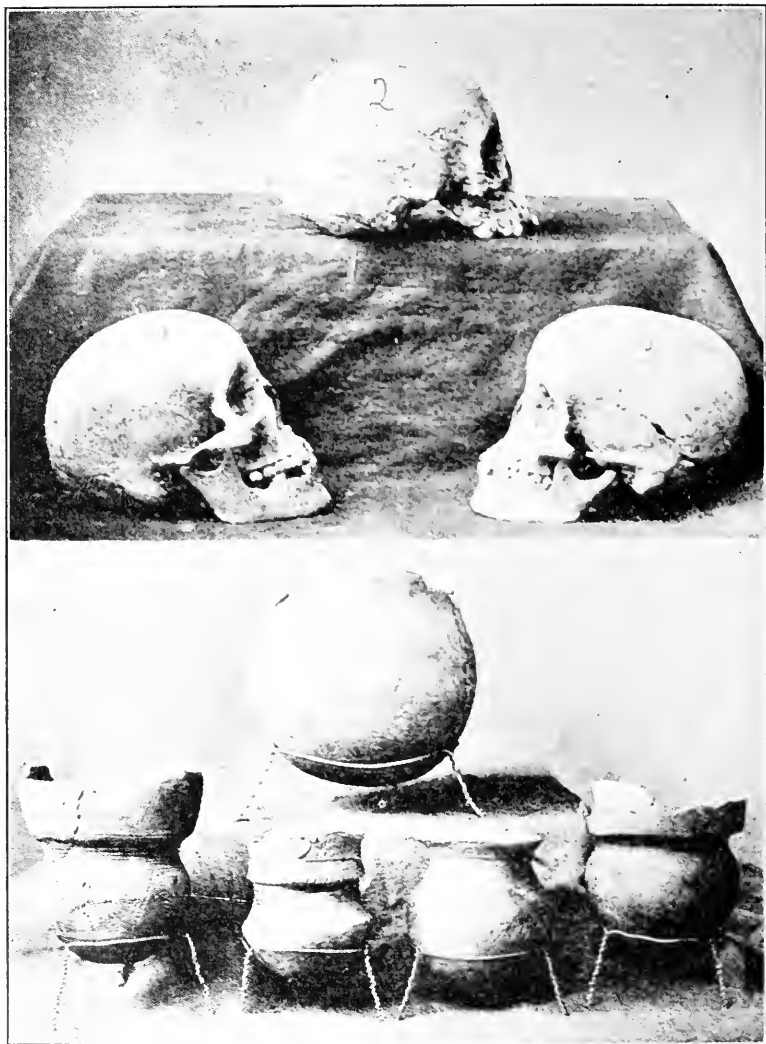


FIG. 37.—Andaste skulls and pots from the Murray garden, in the Museum of the Wyoming Historical and Genealogical Society, Wilkes-Barre, Pa.

pebbles in each, close to each temple (skull no. 1, upper section of fig. 37). This grave yielded also a discoidal stone, a quantity of

burnt ochre, a broken antler comb, part of a shell gorget, and some small shell beads that disintegrated on exposure to the air. These objects might well have belonged to a squaw, but no skeleton was found here except of the "medicine man," or "Turtle chief." The other graves yielded the group of pots and skulls—illustrated in the two sections of fig. 37—now in the museum at Wilkes-Barre, one skull showing by the deep cut near the temple death by the tomahawk. The pot at the left is decorated exactly like the face pot first found, being of the same size and shape. It is more fully shown in Wren's *Appalachian Pottery*.¹ The next is remarkable for the two faces showing headdresses—which Mr. Wright likened to those of Egyptian soldiers—rising to a point over the face and standing out stiffly at the sides (fig. 38). A few other pots were found, broken in removal, as well as a lap-stone, a few rude arrows and shell fragments, and a spiral copper bracelet, all well-described in the *Proceedings of*

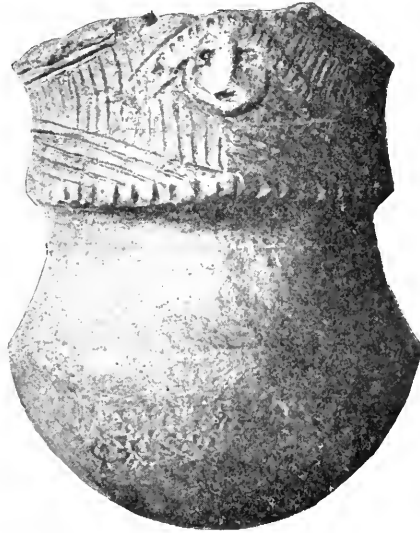


FIG. 38.—Andaste pot with elliptical mouth from Site No. 2; height $4\frac{3}{4}$ inches.

the Wyoming Historical and Geological Society (vol. II, pt. I). Deserving mention next to the pottery is a small antler comb with four broken teeth, of the type made with stone tools about 1600, with two perforations evidently for suspension. The bracelet, recently carefully examined by the writer, is probably of native workmanship like the Algonkian ornaments to be shown later, and made in the same fashion by beating the copper into a thin strip and then rolling it tightly. The spiral form is unusual. In *Indian Implements from Graves at Athens, Pennsylvania*, Chris-

¹ Christopher Wren, *A Study of North Appalachian Indian Pottery*, Plymouth, Pa.; republished from vol. xiii, *Proc. Wyoming Hist. and Geol. Soc.*, Wilkes-Barre, Pa., 1914.

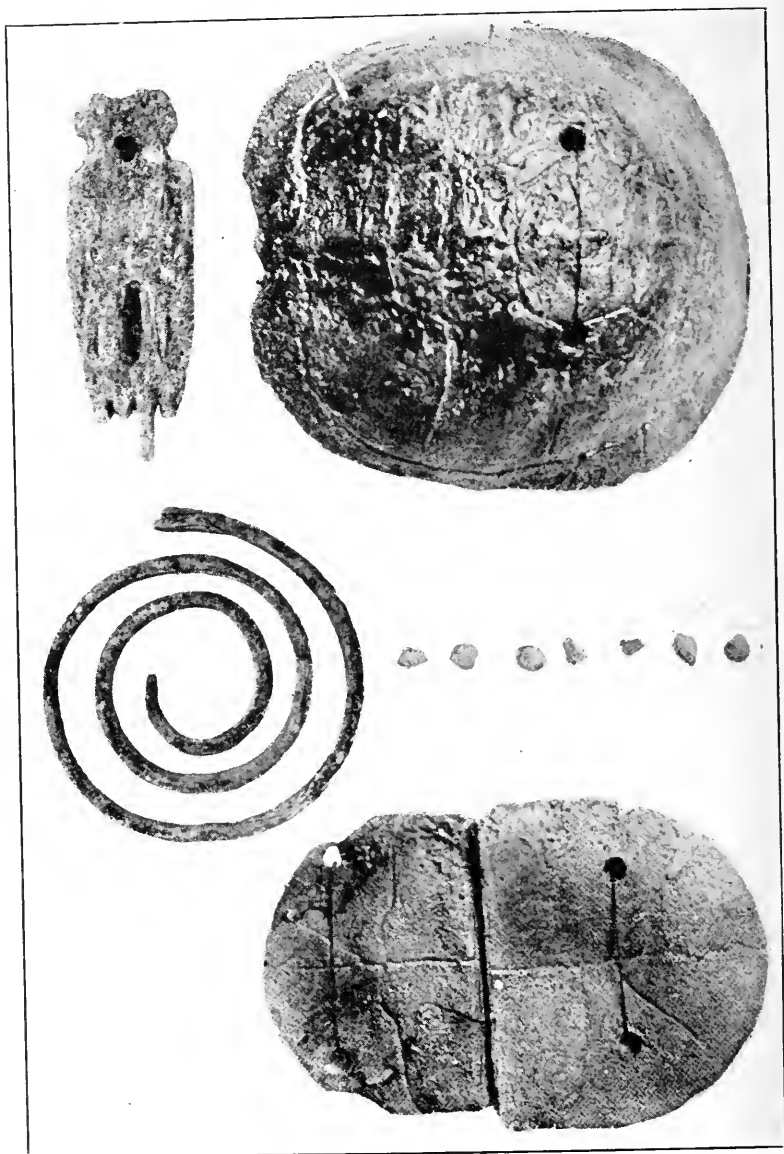


FIG. 39.—Turtle-shell rattles, bone comb, and copper bracelet from Andaste graves in the Murray garden.

topher Wren has given considerable study to these articles and the turtle-shell rattles, but we are inclined to be slightly critical as to his conclusions. Dr. Beauchamp, writing him with reference to the antler comb, says: "They were much used at the time the Iroquois were sending war parties down the Susquehanna against the Andastes. If simple it would be earlier." (See fig. 39). The rattles, as seen in Mr. Wright's map, were found with only one skeleton, and their perforations would indicate that they were used *without* a handle, quite possibly fastened to the ankles or suspended from the waist in the dance. That they are male and female shells is an interesting suggestion. Taken in consideration with long past and more recent investigations, we believe these should be classed as archaic Iroquois, or Andaste.

After Mr. Wright's investigations, test holes having been made all over the one hundred foot lot at said stated intervals, it was soon discovered that there were many more graves and much more pottery. For long years this had been an apple orchard and under several of the old stumps, supposed to be from trees of Indian planting, were Indian graves. Around each of two such stumps were seven graves in a circle, and directly under one stump in the center of a circle of graves, about three feet underground on a layer of clay, were eight pots carefully embedded in sand. Every one had been perforated by thread-like apple roots, and all were broken by a careless workman who was removing the stump just after a day's futile excavation by a second party from Wilkes-Barre. The writer, called by the workman too late, superintended the next stump-pulling and rescued from a child's grave the tiny pot seen in figure 35.

Red ochre in large quantities was found close to several skeletons, also a paint cup and mixer; and for long years at garden-making time the children gathered arrows, sinker stones, and potsherds. A necklace of green beads encircled the neck of one skeleton, but perished on exposure.

Throughout this plot with one exception the skeletons were flexed but buried in a *sitting* posture, often with the right hand upraised and bearing a pot containing food, arrow points, or seeds, the latter leading to the conjecture that the old apple trees may have

grown from these very seeds. Mr. Wright found one skeleton buried at full length with the head on a bundle of twigs, and some bark-lined graves.

The perfect circle of stones in the center, long kept undisturbed, marked the most unusual form of burial. On being removed they were found to cover a quantity of huge drift stones in a space three

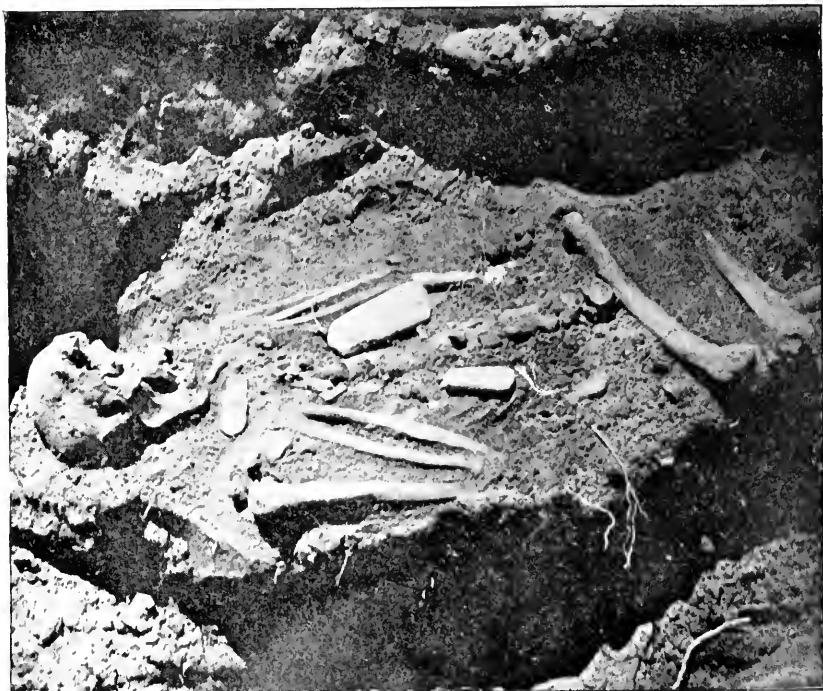


FIG. 40.—Andaste grave in the Murray garden; skeleton now in Tioga Point Museum

by five feet square with a marker at each corner underground. Underneath were more drift stones to a depth of nearly four feet, and below two large flat stones, from a distant quarry of today, which covered the skeleton of a man six feet or more tall, lying on the back, with the elbows flexed, hands spread out on breast, right leg flexed, foot under thigh, and left leg flexed across right. The front of the skull was crushed, doubtless by the weight of stones. A hafted tomahawk lay by the right shoulder, and a

large pot, crushed, at the left of the skull; a fine celt, triangular arrow point, bits of mica, and wampum were also found. This skeleton, embedded in the clay as found, was skilfully removed on sheets of zinc, boxed, and placed in Tioga Point Museum. While in his grave, this Andaste chief was viewed by more than a thousand people, and he is still an object of great curiosity (fig. 40). The rare double-necked small pot with many small fragments of others were found later in the street in front of this lot when gas pipes were being laid.¹

The walk toward the meeting of the rivers takes us out of the narrow neck so full of graves toward old Diahoga or Teaoga (Site 3). The earliest known records are those of Conrad Weiser of 1725-37, who called the Chemung River as well as the town Diahogon. A little later, 1743, John Bartram, botanist, accompanied him. Their location of the "town house" seems to indicate the well-known watch town of the Iroquois on the high ridge south-east of the stone house now on Tioga Point farm. But here for a hundred years artifacts have been gathered, showing a much earlier culture than archaic Iroquois, evidently archaic Algonkian. Seventy years ago a fine collection was sent to Barnum's new museum in New York City, later destroyed by fire. Some of the objects here reproduced were gathered sixty years ago, later carried to England by the collector, and recently returned to the Museum. Steatite fragments abound, and there are also short pestles and small metates found nowhere else in our survey (fig. 41), black celts, rhyolite blades and barbed points, two-holed gorgets, some barbed flints, game balls or war clubs, polished mullers, rubbing stones, crude tomahawks, many small pestles or pottery smoothers, a beautiful barbed point of chalcedony, all typical Algonkian of the early period. Few pipes have been found here. The one shown is stone with incised lines, and one in the Museum is of catlinite, rarely found hereabouts. Artifacts showing the later culture are scarce and

¹ On June 9, 1921, the gas trench having been reopened, parts of three skeletons and some potsherds were thrown out. Paul Scott, on behalf of the Peabody Museum, made further excavations and found a carefully buried skeleton, indicating that here was another cemetery, about one hundred feet from that just described and evidently extending under the street where further investigation was impossible. The culture was apparently late Iroquoian.

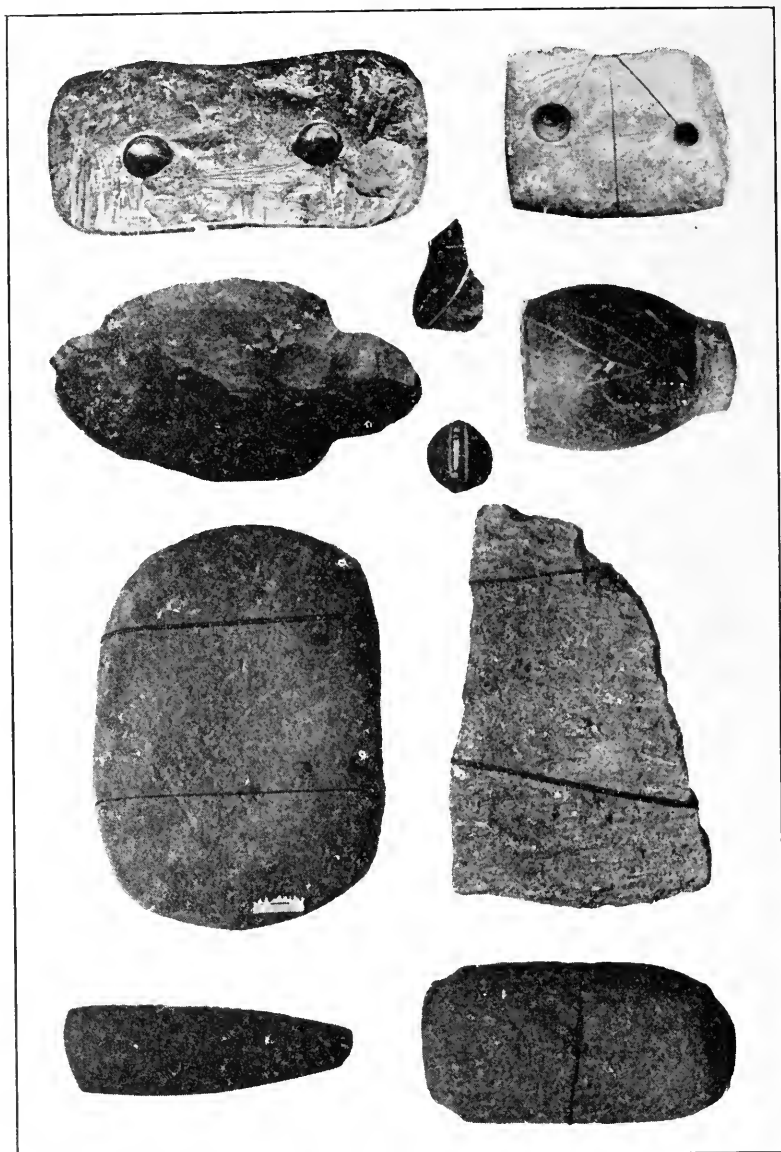


FIG. 41.—Algonkin artifacts from old Teaoga, including a small metate, steatite fragments, and an unusual, short pestle.

not reproduced. All of the larger early implements are found on this site with great shell heaps of river mussel, a sure indication of a long-used village site; and nearby were also found quantities of unfinished and broken implements of stone, indicating a celt and pestle workshop. The pottery may have belonged to the contact period; the potsherds were found with many different designs on the site of the pottery discovered in 1897, described in *Old Tioga Point* and in Wren's *Appalachian Pottery* and here reintroduced by request (fig. 42). While examining the supposed site of Diahoga, M. P. Murray and G. T. Ercanbrack located what was evidently an extensive pottery on the bank of the Susquehanna River about 50 rods southeast of the present stone house. This valley, being on the edge of the ice sheet of ages past, has many beds of clay found associated with glacial drift. At the point mentioned



FIG. 42.—Potsherds from Teaoga.

the river bed from shore to shore is a thick mass of clay, and with the soft shale, sandstone, and mica close at hand pottery making was easy. And here were found close to the river's edge two circles, three or four feet in diameter, paved with sandstone with depression in center showing evidence of long-continued fires, and indicating that here the clay was mixed and tempered for the potter's use. Nearby was undoubtedly a kiln. Four shelves about two feet wide and four feet long, rising in tiers, were built against the bank and walled up at the ends, all of round sandstone laid like a cobblestone pavement, burned and cracked with many fires and strewn with sherds of many pots broken in firing. How they walled up the kiln that easily held a hundred pots of average size we could not decide, but it was evident that the decorations used were seldom

repeated. Most of the sherds indicate the culture of the Algonkian, but others show Iroquois influence, doubtless dating from the days when the Iroquois raided the Susquehanna settlements.¹

Let us now retrace our steps, cross the bridge over the Chemung River, and continue our survey on its west bank. Just north of the bridge, along the river bank, has recently been found a row of fireplaces, evenly spaced, indicating a row of single dwellings or a long house (Site 4). Lapstones, pestles, hammer stones, and all other village implements were found, also Algonkian potsherds and Iroquoian points. Cold weather has prevented further investigation, but this may prove to be a town site of the Andaste, whose unusual cemetery lies only a few rods southward (Site 5).

This burial place, although well known to the Murray family, who were the original purchasers of the land thereabouts in 1791, had never been explored because of the family prejudice against disinterment. The ordinary farm work had disclosed many burials, apparently hasty, the older men saying there seemed to have been trench burial as in time of battle. About 1890, in remaking the public highway, which seems to run through the cemetery, various remains were disclosed. No observations were recorded and nothing found except one large white glass bead, deposited by C. F. Murray in the museum of the Wyoming Historical and Geological Society.

In 1916 came the Susquehanna Archaeological Expedition, one of the avowed purposes of which was "to discover an Andaste cemetery." So many problems seem to await solution here that the advent of this party was hailed with delight, and every courtesy possible was extended to them by the Tioga Point Chapter D. A. R., which organization has assumed the care and maintenance of the Museum—established in 1895 by a short-lived historical society—now housed in the Spalding Memorial Library building.

Mr. Alanson Skinner, who headed the expedition in the temporary absence of Mr. Warren K. Moorehead, spoke several times to interested audiences, saying of this region, previously neglected by archaeologists, that here seemed to be the clue to the origin or migra-

¹ Further investigation shows this to have been a twice occupied village or burial site, culture Algonkian and late Iroquois.

tion of many early tribes. Realizing the value of scientific investigation M. P. Murray, husband of the writer, invited Mr. Skinner and his party to investigate the site on the high terrace, a few rods southeast of the Chemung River bridge on the upper end of the broad river bottom, known since 1770 as Queen Esther's flats. Dr. Donehoo, secretary of the Pennsylvania Historical Commission, was with the party. While the report of the latter has been published, embodying some notes from both Moorehead and Skinner, since the writer went over the ground with the men and was present as much as possible during the excavations, she considers this article would be incomplete without some mention of the results of the discovery of the first known Andaste cemetery named by the party "Upper Queen Esther's Flats." The enthusiasm of Mr. Skinner was very great when a complete pot was unearthed here which he pronounced to be "Archaic Iroquois." This was the beginning of the interesting discoveries, which mean much to science and help to unravel the archaeology of the Andaste. The work was carried on under difficulties, but, as the leader said at the time, "although the rain fell steadily and the openings were filled with water and mud, like that of Flanders, even the laborers became so interested that they worked every minute of the day; for with the skeletons were deposited relics, not numerous but enough to show that they were the same people that Capt. John Smith met on his raids on Chesapeake Bay," and the same as those buried in the Murray garden.

At first this seemed to be entirely a communal burial place, for there were bundles of bones, disassociated skulls, and sometimes several skeletons together, so much like the Hurons that Mr. Skinner at once suspected this to be a cemetery of their relatives, the Andaste. Both he and Dr. Donehoo agreed that no such cemetery had been found east of the Mississippi; although, as excavations continued, various forms of burial were found and, from the condition of the bones, doubtless made at different periods. A careful survey of the field was made by Engineer Sugden, many test holes being sunk on the flats and west of the highway, but it was on the sunny knoll, east of the highway, that the fifty-seven skeletons were found in thirty-three graves, buried without any regularity as to depth, position, or location. There was such a paucity of relics

that it was soon said that they must have been a poor people. All were flexed or bundle burials and the majority of artifacts were near the head or hips. One highly polished celt was found lying close to the chin of the skeleton of a male.

Most of the pottery was decorated, showing about the same culture as that in the Murray garden, and the condition of the greater part of the bones seemed to show about the same age, though others were soft. Dr. Donehoo stated that the relics resembled those found at Lock Haven, where, however, there are no skeletal remains. The skulls, femurs, and tibias found were of about normal size. Some graves revealed fragments of pottery and pipes, especially under the skulls, possibly after the Indian fashion symbolical of the whole vessel; and in several instances sherds from one pot were found in different graves, which at the Heye Museum proved to fit together sufficiently to restore the whole. One was really unique in that it seems to have two stories, others showing the notched rim or deep collar larger than the body, a true Andaste type, like some noted in Christopher Wren's *North Appalachian Pottery* although he fails to designate the culture. One grave had two skeletons, one lying above the other. Another had the head turned almost opposite to its natural position and the face jammed down. This may have been a young follower of the chase, a bear's lower jaw and a bone awl being close to the head; fragments of a plain pot were behind him. In another grave beside the flexed skeletons were six bundle burials, a whole pot with them, and near the skeleton a smaller pot filled with oxide of iron and having for a cover one of those thin river pebbles chipped into a round shape so common in this region, but heretofore classed by Moorehead, Wren, and others as game stones or problematical objects. Let them hereafter be recognized as pot covers!

In another grave were three skeletons "apparently flung in haphazard in the flesh." Another, having only fragments of a skull and some small bones, suggested possible reinterment in an ossuary or removal by white men. In one grave was the bowl of a beaver effigy pipe, broken before burial, similar to a wolf effigy pipe in the Tioga Point Museum. Two trumpet disk pipes were found and a very large one of the same type, broken and mended

in ingenious fashion by its owner. It was not three-fourths of a yard long like those Captain Smith admired which were evidently effigy pipes, as he said, "They had a bird or deere or some such device at the great end, sufficient to beat out one's brains." While the writer was present one of the men in working a grave exclaimed, "There are horns over his head!" Mr. Skinner said that indicated chieftainship. Later this was found to be a bundle burial, completely covered with antlers of Virginia deer. A passing visitor, however, heard the exclamation and attempted to verify it by interrogating a fun-loving Maine workman, and the story grew and was printed from coast to coast that one or more skulls had been found with horns growing from the forehead!

But one grave suggested contact with whites, either through a visit to other tribes, or a guest in camp—perhaps Etienne Brulé, Champlain's scout, the first white man known to have traversed the Susquehanna (about 1615). This skeleton had around the neck a string of copper beads, not made by Indians, strung on a braided sinew. The salts of the copper had preserved, not only the sinew, but a tiny fragment of the beaver skin robe in which the deceased had been wrapped for burial. Under his knees was a polished game stone, not often found so far north, and there were two band-like rings near his hips. Near his breast were the much-rusted remains of two steel scalping knives—the only ones known to be found in this locality except in the grave of a surgeon of Revolutionary times near the Museum. This grave contained, not only another flexed skeleton, but under the feet of the two a bundle burial, two skulls being of children. A number of these skulls were only a few inches from the surface. With one skull of a child was an animal resembling a beaver, like the effigy pipe crudely made out of an antler. With one bundle burial were seven arrow points lying as though buried in a quiver, all of the Iroquois triangular shape, but serrated. There were celts, both chipped and polished. In all, 8 pots, 4 pipes, 4 celts, and about 25 other objects were found, a small proportion as compared with the Murray garden cemetery.

Along the line of the road west of the graves were five firepits from one to four feet in depth. Firepit No. 1 contained charcoal, burnt bones, and stones; no objects. No. 2 contained a bone awl; No. 3, no objects; No. 4, a bear's tooth; No. 5, no objects.

Many broken objects proved to be restorable, and no doubt make a fine showing in the Heye Museum. We regret our inability to reproduce them. The strictly scientific observations we hope may be published in a not too distant future in the series of the Heye Museum bulletins. Therefore we leave to the reader the discussions and deductions to be drawn from the discoveries on this site.

Dr. Donehoo recommended in a public address that the site be marked "as the first Andaste cemetery to be identified along the Susquehanna," pledging himself to obtain an appropriation for that purpose from the Pennsylvania Historical Commission.

As to the already published reports of other work by the Expedition in this valley, while much more time was spent here than at any other point, we do not consider that sufficient investigation was made to lightly set aside the work of former students of the early tribes along the Susquehanna. We believe that the careful study of the Andaste and the surveys made by Rev. David Craft and Gen. John S. Clark should not be considered as local traditions until thorough scientific investigation in fair weather can be made.¹

Continuing on our way, a mile or two below, we reach Site 6, the broad river flats occupied in Revolutionary times by "Queen Esther Montour" and her tribe of Monsey Delawares, who with their flocks and herds occupied these flats from Milan to the site just described. Here lodge sites, fireplaces, and shell pits are still easily discernible. The exact location of Esther's town, destroyed by Hartley in 1778, was between Wolcott and Buck Creeks, exactly opposite the point made by the meeting of the Susquehanna

¹ The members of this Expedition differed somewhat as to the territory of the Andaste and the sites assigned to them by Clark and Craft. Carantouan may be mythical, but no other town site has yet been discovered above Tioga Point. Below our present survey the earthworks at the mouth of Sugar Creek are acknowledged to be similar to those of Spanish Hill, and the extensive site at the mouth of Towanda Creek was pronounced to be Andaste, needing more careful investigation; the site on the flats of the Piollet farm at Wysox were set down as either Andaste or early Algonkian. The almost obliterated site on the bluff at the mouth of Wyalusing Creek and possibly the one at Mehoopany also need further study. Sites previously named Andaste at Meshoppen and Tunkhannock were pronounced by Mr. Skinner to be Algonkian, the Andaste trails from their settlements on the West Branch having followed Towanda and Sugar Creeks, leaving the middle reaches of the river to the Algonkian.

and Chemung Rivers, on a high bank washed and often overflowed by the violent Chemung floods. Indian artifacts have been collected at this site from the surface for a hundred years or more, but it is only within the twenty-five years since the founding of the Tioga Point Museum that they have been preserved, or any observations taken. The most noticeable is a fine wolf effigy pipe found on the surface after a flood, which we had classed as a totem of the Wolf Clan of the Delaware; but it is not Algonkian, having been pronounced by members of the Susquehanna Expedition to be Andaste, or archaic Iroquois. Was this an Andaste site, too, prior to Delaware occupation? That it has known many periods of occupation is evident, not only from the artifacts but from the observations of all recent intelligent collectors. The most interesting and extensive finds have been from the river bank after floods. Here thirty years ago was found, far below the present surface, a slab-lined grave of the Shawnee type. With a very large skeleton was the longest pecked roller pestle ever found in this region. The pestle and most artifacts from this site indicate Algonkian culture. Small argillite blades and a crude drill, found by Andrew Delpeuch in recent years, are shown with pottery. He also found several stone-lined graves but no details were recorded. P. L. Lang discovered three fireplaces in the bank, one directly above the other, at depths of 6, 9, and 12 feet below the surface respectively. "The large deposits of firestone, charcoal, and shell refuse with clear deposits of silt between show that much time had elapsed between the usage of these three sites, a most unusual circumstance," says Mr. Lang. Even the highest fireplace is below the level of Esther's town. The potsherds found here all seem to be pre-Iroquoian. Washed from the bank, seemingly all from graves, sufficient fragments have never been found for restoration. The beautiful specimen, shown in *Old Tioga Point* (page 205), indicates a contact period, distinctly Algonkian in some details, yet showing some early Iroquois decorations. But the majority have the collarless rims, inside decorations, punched, roulette and fabric-wrapped paddle work of the Algonkian. The chevron, or herring-bone decoration, is common, the best example (see fig. 43) having been found by Lewis Rinebold. A really unique decoration is shown in two sherds in the second row;

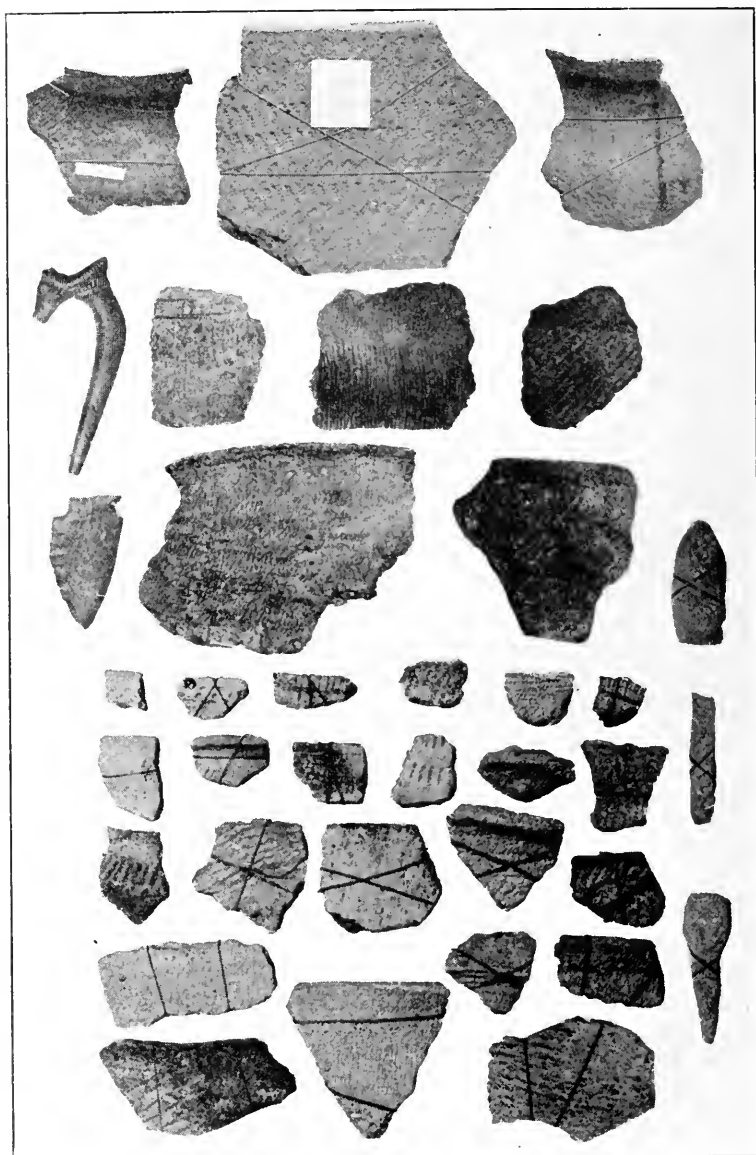


FIG. 43.—Objects from archaic Algonkian and late Delaware town;
an effigy pipe, probably Andaste.

and below is the punched decoration assigned by Professor Willoughby to the archaic Algonkian. The sherds, however, all vary in certain particulars, some being very thick and many having an outside layer of color. Nearby is a well-known bed of brick clay giving a dull-red color when fired, and this seems to have been used as slip over the outside of some vessels whose interior is made of carbonaceous shale. The large sherd found by Ellsworth Cowles (center top) apparently belongs to a pot of great size and others show slight Iroquois influence.

The student may be interested to compare these potsherds with plates in Christopher Wren's *North Appalachian Pottery*, and with

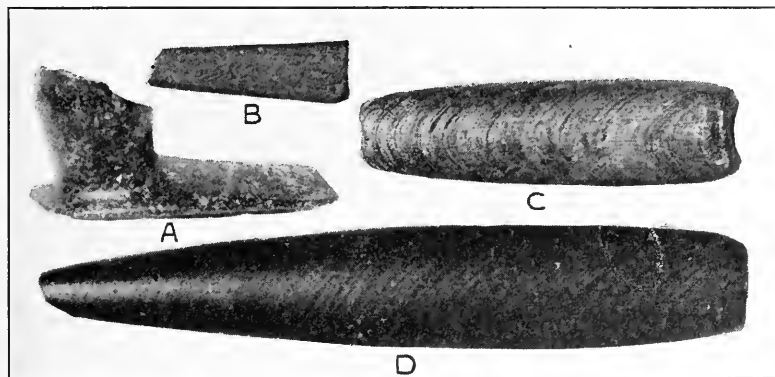


FIG. 44.—Tubes and broken pipes; reduced one-half: A, platform pipe from Cash Creek; B, D, from Sheshequin; C, from a hilltop west of Athens.

the Lenapé earthenware in the Peabody Museum at Cambridge, the Field Museum at Chicago, or the American Museum of Natural History. In this locality we are unable to designate, as in Wyoming Valley, definite sites occupied by the Delaware, Shawnee, Nanticoke, and Conoy; therefore, only by comparison, may the special culture be decided. However, as the last inhabitants were the late Algonkian, may they not have known of the previous occupation by their kin? Large flint knives, ceremonial stone beads, and a stone knife cleverly fitted to the hand, similar to Moorehead's curved flaked knife (see fig. 46, A) were found on the lower part of the site, also a heart-shaped pendant of beaten lead with three perforations at the top, evidently of Indian workmanship.

On the Point and on the west side of the river the number of stone hoes, large pestles, mullers, and very large mortars would indicate a people among whom agriculture had been long established.

From here to Ulster doubtless the proximity of the steep mountains to the river precluded occupancy, as even the most used trail crossed to the New Sheshequin flats. Therefore we will make our next survey at Ulster, or Old Sheshequin, eight miles below Athens. Here there has always been desultory collecting. Probably the most extensive in comparatively recent years has been by Guy Culver and Andrew Delpeuch, both of whom have many artifacts, but no recorded data. We regret that the Culver collection is not available for study. Within the last five years Paul F. Scott—now studying at Harvard along these lines—has made some careful investigations and has a representative collection in Tioga Point Museum. We come first to a village site (No. 7), on the second river terrace on the Walker farm, just above Ulster. Broken chips and barbed points are abundant, indicating a possible workshop, such as are quite frequent along the river. Firestones are plentiful, rough pottery (see fig. 47), and great abundance of sinker stones for both lines and nets where shad were plentiful. On this site was found a heavy iron tomahawk of Dutch pattern, perhaps left by the captive Dutch traders of 1614. Now we cross Cash Creek, on each side of which were Delaware towns two centuries ago (Sites 8 and 9). Half a mile from the mouth is a more ancient camp or village site that has yielded rough celts, rhyolite points, and the burned stone of old fireplaces, also two unusual large pot covers of stone, dressed smooth with beveled edge. Still farther up this creek, on a hilltop that may have been used for signal fires, were found by Miles Smith a few hafted spears, one four inches long of yellow jasper, two highly polished celts, and the only platform pipe found in this region, of highly-polished mottled black stone, its edges broken by the plow (fig. 44, A).

The tube *C* in this figure is from a hilltop west of Athens, and has been called a moose whistle. The others are from Sheshequin. We are in doubt as to the culture to which these should be assigned.

Returning to the river, let us consider the long-known site (No. 10) on the river flats east of the Lehigh Valley Railroad, covering

Van Dyke and Scott farms. Within the past eighteen months the construction work on the highway has revealed a burial site, where Scott made careful investigations. "Six graves were opened, showing in every instance burned earth and charred corn near the surface, flexed skeletons from two to five feet underground, no evidence of European influence. The skeletons were unusual in size, the skulls dolichocephalic.¹ The Algonkian "elbow pipe" of earthenware, the soapstone pipe, both marked *B* (fig. 46), the bear's teeth perforated to be strung for a necklace are all from this burial site; also the pipe fragments, bone tools, bone perforated for pendant, ceremonial beads, and tiny celts (fig. 45). The pottery (fig. 47) varies in type but the arrow points here are all Iroquoian. The perforated hammer stone (fig. 47, *B*, middle row) is an Algonkian type found in Delaware and New Jersey, but seldom here.

Some red and yellow jasper points, Algonkian potsherds, and a short highly-polished pestle in the Shaw collection are said to be from this site, but we cannot verify the data. There is also in our

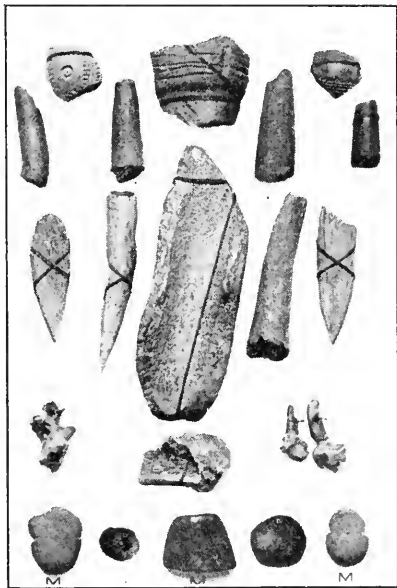


FIG. 45.—Bone tools, amulets, beads, and fragments of pipes from the Paul Scott collection; M, M, M, amulet and sinker stones.

¹ We have records that enormous skeletons were found on this site seventy years ago; and about the same time two of unusual size were found in a "stone sepulchre" at Burlington (southwest) doubtless a Shawnee burial. There is also a record of an Indian grave opened seventy-five years ago near a spring on the south side of Mt. Pisgah, having a skeleton of immense size declared by a physician to have belonged to a man "seven feet tall." The Burlington collection in the Museum is worthy of examination, especially the peculiar celt, highly polished on one side and beveled on the other, pronounced a western Seneca type. There is also a bone gouge or spoon, but all other artifacts are Algonkian.

Museum a grooved axe of polished stone, thirteen inches long, from an Ulster site, the exact location unknown (see *Old Tioga Point*, p. 207), which could have been wielded only by a powerful man.

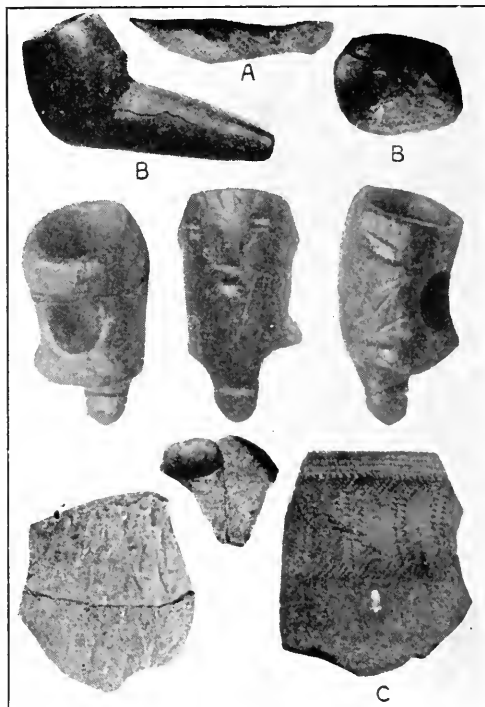


FIG. 46.—Paul Scott collection: effigy pipe from supposed Algonkian site; A, stone knife; B, pottery and soapstone pipes; steatite fragments; C, large fragment of earthenware from another location.

Just below here, on the second river terrace, is the most important ancient village site (No. 11), in Old Sheshequin, extending from the Scott-Mather line south to the center of Layman farm, the lower end near a large spring showing the oldest culture. Steatite fragments of varying thickness abound (fig. 46), but there is no trace of earthenware. There are, however, medium-crude rhyolite points, crude knives, long pestles, hammer stones, club heads grooved longitudinally, many small celts of black slate,

tiny scrapers, a broken butterfly ceremonial, a brass tube bead, small drills, one-sided spears, a broad arrow hafted (unusual), and wee ones all shown in the upper part of figure 47. Here also was found the fine effigy pipe of steatite similar to those of Andaste

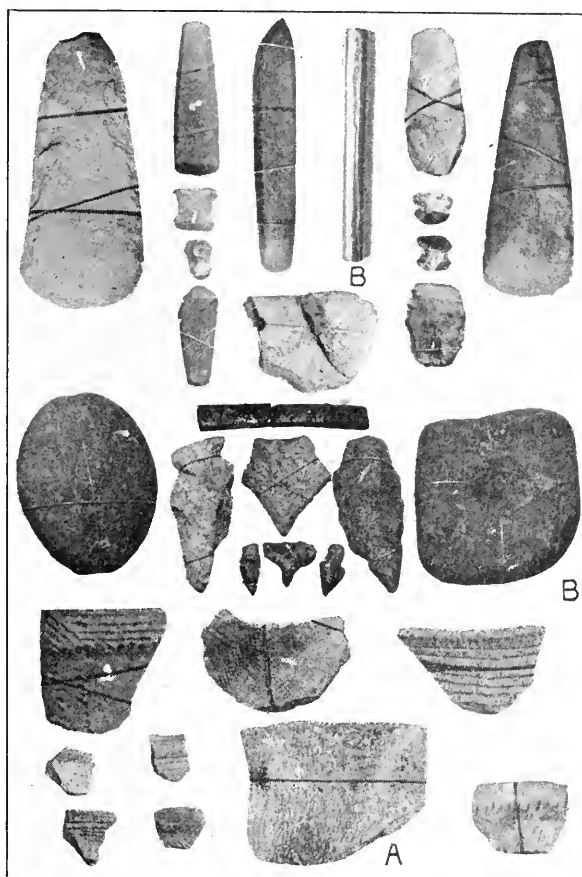


FIG. 47.—Paul Scott Collection, Ulster; B, brass tube bead and perforated hammer stone from Site 11, Algonkian and Iroquois.

earthenware (fig. 46)—this represents a turtle or a porcupine with a distinct human face incised on the back—also the miniature amulet and sinker stones (M in fig. 45). Indeed Paul Scott's collection from this site shows a multiplicity of small artifacts, suggesting a tribe of pigmies rather than the giants of the Van

Dyke burial site, who might well have been some of Captain Smith's Sasquesahannocks. Doubtless this site should be assigned to the archaic Algonkian, deserving further study. The large fragment of earthenware (fig. 46, *C*) was found by Scott across the river in a shell heap or refuse pit described later. Most of his collection are surface finds.

Unquestionably here is a locality that should have more careful investigation, for which we hope in the near future. The lower half of Bradford County, almost untouched in our survey, has also much to reveal concerning both Andaste and Algonkian occupation, evidence fast being scattered by the desultory collector. Would that every private collector would adopt as an axiom these words of Arthur C. Parker: "Archaeological material should be collected *only* for two distinct purposes, first to increase knowledge, second to illustrate and diffuse knowledge." Each artifact, however tiny, should have a label or number connecting it with the site on which it was found.

TIOGA POINT MUSEUM,
ATHENS, PA.

BOOK REVIEWS

METHODS AND PRINCIPLES

The Psychology of Insanity. BERNARD HART. Cambridge University Press, 1919. XII, 176 pp.

Apparently many ethnologists are unable to resist the lure of psycho-analysis and the psycho-analysts are notoriously prone to correlate their psychiatric data with the findings of the ethnologist. Accordingly it seems desirable that the student of cultural anthropology should familiarize himself with the fundamental concepts of the new sister science through some approved manual rather than through incidental references in the press and current magazines, from which he might readily derive the notion that psycho-analysis belongs to the eminently disreputable cultural stratum of Greenwich Village and Bolshevism. The book here offered to us, representing the third printing of the third edition, may be fairly described as a pedagogical masterpiece. In the brief space of less than two-hundred pages Dr. Hart succeeds in giving an extremely lucid exposition of such basic notions as Dissociation, Complexes, Conflict, Repression. He is likely to correct the popular belief that the subject centers in a discussion of sex, for this topic is barely mentioned. The treatment of rationalization ought to prove especially stimulating to ethnologists, who have dealt with the comparable phenomenon of secondary interpretation. There is also food for reflection in the concluding sentences, which thus dispose of much half-baked eugenic effort:

Such considerations suggest . . . that those enthusiastic reformers who would initiate drastic legislation to obtain selective breeding may reasonably be asked to proceed with caution. For it is at least conceivable that our present complacent assurance that every individual must live and act within the arbitrary limits assigned by conventional and purely artificial standards of conduct, or else be segregated from society, may be fallacious and inimical to the best development of the race. It is possible that insanity, or a part of insanity, will prove to be less dependent upon intrinsic defects of the individual than on the conditions in which he has to live, and the future may determine that it is not the individual who must be eliminated, but the conditions which must be modified.

ROBERT H. LOWIE

Source Book in Anthropology. A. L. KROEBER and T. T. WATERMAN.
University of California: Berkeley, 1920. 565 pp.

Confronted with an ever increasing host of students registering for the two elementary courses offered by their department, the anthropologists of the University of California have been hard put to it for lack of any adequate modern text-book. Originally they provided the essential minimum of reading matter by a slender syllabus of selections published each semester and devoted to biological and to cultural anthropology, respectively. In 1919 a single paper cover united the year's selections, and the new cloth-bound Source Book represents a greatly amplified and partly altered edition of the previous year's compilation.

Although the editors declare in the preface that the articles "have been selected for their utility in stimulating discussion," they have wisely departed from this rule in a number of instances by including statements of fact that are not otherwise readily acceptable. Von Luschan's lecture on "The Early Inhabitants of Western Asia" may be cited as an example. Altogether the new syllabus marks a great improvement on its predecessors inasmuch as there have been many additions from writers acquainted with modern points of view and technique. Every teacher will also be delighted to find some real classics preserved here, notably Tylor's discussion of the Stone Age and his article on "A Method of Investigating the Development of Institutions."

Naturally every anthropologist would make a somewhat different selection. Personally I regret the absence of any discussion of the origin of the domestication of animals. The article by Galton listed in the Bibliography, with a few pages translated from Hahn and a few more extracted from Laufer's monograph on the reindeer, would supply the deficiency. In general I feel that what is commonly known as culture-history is inadequately represented in the book. For future editions I venture to recommend Laufer's "Some Fundamental Ideas of Chinese Culture" (*The Journal of Race Development*, vol. V, no. 2, 1914, pp. 160-174) and Breasted's paper on "The Place of the Near Orient in the Career of Man and the Task of the American Orientalist" (*Journal of the American Oriental Society*, 1919, vol. XXXIX, pp. 159-184). Regarding the former I can record the experience that all of my students devoured it with avidity. Quite apart from their informational value both these papers suggest discussion of the processes of diffusion and relevant questions.

The only selection to which I feel in duty bound to offer strenuous objection is that of O. T. Mason's "American Indian Basket Weaves."

Perfectly legitimate in a graduate course on technology, it seems quite out of keeping with a general introductory course. I think even a detailed treatment of kinship nomenclature would prove less repulsive to the average undergraduate.

In the continued lack of general books Professor Kroeber's and Professor Waterman's compilation will doubtless be of interest to other teachers of anthropology, and it is to be hoped that the edition is adequate to meet such extra-Californian needs.

ROBERT H. LOWIE

An Introduction to Anthropology. Rev. E. O. JAMES. London: Macmillan and Co., 1919. 259 pp.

This little volume appears scrambled together, but its diversity and loose-jointedness are likely to increase its appeal to those who have little previous acquaintance with the subject. The author's avowed purpose is to stimulate rather than to teach or prove; and in this he succeeds.

The introduction on the Evolution Hypothesis runs from Lucretius through the Church fathers, Luther and Milton, Linnaeus, Lamarck, Boucher de Perthes, *The Origin of Species*, anthropology as "the child of Darwin," to the compatibility of evolution with the belief in God. Religious harmonization of a liberal kind recurs in several subsequent passages.

The first chapter, on the "Origin and Antiquity of Man," surveys the Pleistocene fauna and glaciation, Pithecanthropus, Piltown ("a new genus combining a human cranium with an ape's jaw"), Heidelberg (at much less length), and the racial types of the Palaeolithic.

Then follows "The Culture of Primeval Man," Eolithic, Palaeolithic, and Neolithic, with attention particularly to implements.

Chapter III on the "Manners and Customs of Primeval Man" is written under the influence of Sollas in the beginning, then slips into a rather detailed account of the Australians, especially of their social organization, and ends with an argument for monogamy.

The fourth chapter is devoted to religion and considers in turn the theories of Frazer, Marett, and Tylor, mana and animatism, the Chapelle aux Saints and Le Moustier burials, long and round barrows, Stonehenge and cromlechs, dolmens, the Elliot Smith Heliolithic theory, the cave of Niaux, Gargas hand stencils, Arunta churinga and intichiuma, their bearing on Aurignacian and Magdalenian cave ornamentation, sacrifice, and the attitude thereto of the J and P narratives of the Pentateuch.

"The Beginning of Civilization" makes chapter five. Genesis, pastoral life, Myres's four phases, blood bond, metals, bronze in Egypt and elsewhere, trade routes, iron, Hallstadt and La Tène, the Late Celtic period of Britain, Glastonbury are considered.

The final section is on the "Distribution of Races." No attempt is made to give a definite classification. Descriptions of particular peoples and discussion of their historical movements or hypothetical origins are mingled with brief expositions of various theories, among whose authors are Keith, de Quatrefages, Elliot, Abercromby, Huxley, Keane, Kollmann, Haddon, Schmidt, Rivers, Brinton.

It is plain that the book is not integrated nor even orderly. But it flows with a certain continuity, touches upon many topics of intrinsic interest, and is distinctly readable. It is a product of the stream of thought from which Marett's "Anthropology" emanated; and, though to a less degree than that work, it promises to prove stimulative to people of a certain background of culture who want to know something, but not too much, of anthropology. This positive value must be appreciated, and is not detracted from by the fact that the volume is too loosely knit to aid much in teaching, too light to serve as a work of reference, too inclined to assume knowledge to succeed in spreading illumination among the ignorant, and too specifically insular in point of view to be likely to appeal widely outside of Great Britain. The book might have been better; but it serves a function.

For the numerous and sometimes crass misprints responsibility must be divided between the author and a publisher that has heretofore prided himself on his reputation. Thus "Erasmus, Darwin" (p. 9); "evolution and anthropology disproves" (p. 20); "Pinck" and "Pithecanthropos" (p. 25); "a pithecanthropi" (p. 57); "MacLennon" (p. 118); "fulchra" (p. 153); "the erection of the dolmens are" (p. 195); Greece in the Iron Age in "12,000 B. C." (p. 198); "Syria" for Styria and "Cilicia" for Galicia (p. 201); and Grevner for Graebner (p. 238).

A. L. KROEBER

NORTH AMERICA

Essai sur l'origine des Dénés de l'Amérique du Nord. R. P. A. G. MORICE, Saint Boniface, Manitoba, 1916. 245 pp., 12 plates.

For many years Father Morice has been a missionary among the Athabaskan tribes of British Columbia, and has written numerous valuable articles and monographs in regard to them, based upon his personal observation. For these all students of the American Indian must be

grateful. When, however, as in the present volume, he turns from the rich stores of his experience and first-hand knowledge to make an elaborate comparative study of the northern Athabascan tribes and those of northern Asia, and attempts to demonstrate the Asiatic origin of the present Dené culture, his friends must wish that he had been better advised. For he has only succeeded in producing a laborious compilation of similarities which are either without significance or whose significance he has misunderstood, with the result that he turns at last to that mirage of the Lost Ten Tribes, and finds in this the final solution of many of his troubles.

In his introductory chapters Father Morice briefly describes the Dené tribes; refers to attempts to trace the origin of the American Indian; shows that on the linguistic side there is little observable resemblance to Asiatic languages; and then quoting well-known facts, declares that a migration across Bering Straits was nevertheless quite possible. Accepting the relatively recent arrival of the American Indian in the continent, he further accepts as history the Dené traditions of migration from a land abounding in snakes and monkeys. There follow a series of chapters in which various elements of Dené culture are compared with those of a great variety of tribes of northern Asia; the result of this laborious and miscellaneous comparison is a conviction that the similarities found demonstrate the origin of the Dené from some northern Asiatic tribe, confirming thus their migration tradition. Since the Carrier language of British Columbia shows, according to Father Morice, monosyllabic, agglutinative, incorporative, and inflectional features, he concludes that this is a probable indication of its composite character, including thus Chinese, Ural-Altaic, and (?) Semitic languages. Following, finally, the time-honored methods of those who have been beguiled by the hoary fallacy of the Lost Ten Tribes, he ascribes to these the origin of many of the cultural elements among the Dené.

Father Morice has for the most part used his sources quite uncritically; he has not distinguished between similarities in culture which are significant and those which are not; he fails to recognize that many of the items of northern Athabascan culture which he discusses are really borrowed and not Athabascan at all; he apparently has little conception of the real character, complexity, and antiquity of American culture in particular nor of the manner of growth of aboriginal culture in general. But it is unnecessary to go into further details. We can only hope that after this unfortunate adventure in a field and in a kind of investigation to which he is unaccustomed, Father Morice will return to the field

wherein he is at home—the description of the culture of the tribes among whom he has so long and so faithfully labored.

R. B. DIXON

To the American Indian. Mrs. LUCY THOMPSON. Eureka, California, 1916.

This volume of over two hundred pages on the Yurok of north-western California is written and published by a full-blooded Yurok woman. It is a valuable contribution to the world's knowledge of a specialized culture of which available descriptions are few.

In its exterior Mrs. Thompson's work shows roughnesses. The style is without polish, the proof-reading inexperienced. General background is lacking. Inadequacies of this nature are likely to establish a prompt prejudice against the value of the subject matter. Such prejudice the reviewer wants very much to dispel. He has not only worked with the Yurok but lived with them, and finds it a pleasure to attest the definite scientific value of Mrs. Thompson's pages. The accounts of house building, burial, several of the dances, wars and feuds, marriage customs, slavery, tobacco growing, to mention only a few of many points, contain much detail that is entirely new. A comparison with Goddard's "Life and Culture of the Hupa" establishes agreements on hundreds of points, very few discrepancies, and many elaborations by Mrs. Thompson. Yurok sounds are difficult to render in modern English spelling, yet with the aid of Waterman's recent "Yurok Geography" virtually all her proper names can be transformed into scientific orthography. Her accounts of the fish dam at Kepel and the deerskin dance which follows, and of the so-called Jumping dance at her native village of Pekwan, are particularly detailed. These are two of the greatest ceremonials of the whole culture area. Numberless allusions throughout the book bring out the high regard which the Yurok had for property and the importance in their lives of a caste system. That the latter had an ethical as well as an economic aspect is a fact that ethnologists in their search for concrete data are likely to underrate. It is fortunate that Mrs. Thompson is sprung from the aristocracy. A low-birth Yurok would have acknowledged the pervasive class distinctions in his conduct, but unduly toned them down in his descriptions.

At two points this work must be used with caution. The mythology has not the same value as the remaining material: it is blended with Christian elements. For instance, Wohpekumeu, the trickster culture-hero is presented as "God," Pulekukwerek, the monster-destroying hero,

as "Christ." Some of the minor tales are purely native. Second, the author appears to overrate the influence of the Tetl (Talth) of whom she is one and whom she portrays as a constituted "lodge" or secret society. The Tetl seem to have comprised the medicine man or priest who knew and recited the formula for one of the great dances, his assistant and prospective successor, one or two women with definite ancillary ritual functions, and more or less variably a few other individuals who helped in singing. There is undoubtedly in this body a most interesting germ of a secret society, but the author's implication that it was organized as such is probably misleading. However we know very little about the Tetl at Pekwan or elsewhere, and all her statements about them are therefore most welcome.

This book being as it were privately published, is likely not to reach libraries as extensively as it should, and once the edition has been disposed of to those with local interests it is likely to become very difficult for public institutions to secure. It can be obtained for \$1.50 from the author at 1557 Myrtle Avenue, Eureka, California. It is a volume that should be available in every library that pretends to a complete record of American ethnology.

A. L. KROEBER

Alsea Texts and Myths. LEO J. FRACHTENBERG. (Bureau of American Ethnology, Bulletin 67.) Washington, 1920.

In 1898 Boas initiated a movement to secure some record of the languages and cultures of the tribes of the Pacific coast before they should become extinct. Henry Villard, and subsequently his widow, financed the undertaking. Farrand began and Frachtenberg continued and completed the studies of the Alsea, which were carried on under the auspices of Columbia University and the Bureau of American Ethnology. The results were edited by the Bureau under Hodge and brought out under Fewkes. This record suggests that continuity of purpose and power of coöperation are perhaps more developed among anthropologists than their occasional conflicts of opinion lead them and fellow scientists to believe.

The collection contains 24 texts, two of them interlinear, the remainder literally translated, aggregating over 200 pages; 4 additional tales in English; an Alsea-English and an English-Alsea vocabulary; and a list of grammatical elements. This means that the language has been adequately and the mythology tolerably preserved; and ethnologic data are of course incidentally embodied. In an introduction

the author discusses the nature and relations of the mythology. The latter does not seem very distinctive. The reviewer feels that the affinities with northern California are generic rather than specific, and that Farrand's finding of a noticeable change of culture at the southern border of the Yakonan family, of which the Alsea are members, is rather sustained by this material.

Until the grammar based on the texts appears, comment on the character of the language is best deferred, except for the statement that the reviewer finds the vocabularies full of resemblances to the Penutian languages of the great central valley of California. For instance: *Tooth*, t'Elil; Wintun si, Costanoan sit, Yokuts teli. *Tongue*, stilak'-ayust'; W tahal, Y talxat, talapis. *Mouth*, xamaL-iyū; Maidu sim, Y cama. *Nose*, tE-sin, ku-snūn-hayust'; W sono, Linik. *Eye*, hayān-iyust'; Md, C, hin. *Hand*, tām-tem; W sem. *Liver*, k'ipil; W kila, Md kūla, Y dip, dalapis. *Old man*, mehaīt; Y moxelo. *House*, itsāi-s; Y ti; tsi, Miwok utcu. *Water*, k'ilū; Y ilik, Mw kik, C si. *Rain*, llaXū-s; W luka. *Snow*, t'ilxu-s; W yolo, Mw kela, tana. *Stone*, k'il; W tului, Y cilel, xelul. *Star*, lalt'; W luyuk, larak, Md lūlū, Mw tealatu. *Ashes*, pīya'; W puk, put, Md pupu, Y hapac. *Dance*, kūit, kwīd, k'il'; Mw kal-, Y k'am. *Sleep*, atsk., tsinsu; Mw ets, C eṭen, Y eṭim. *Three*, psinlx; W panol, Y copin. Analytic comparison will no doubt confirm these hastily compiled examples and add many others. Even the frequency with which the several Californian languages appear in this brief list is suggestive. Wintun and Yokuts, the most northerly and southerly, appear to have the most numerous or most evident cognates in Alsea. They are also the ones which on a comparison of the California Penutian languages among themselves seem the most generalized or primitive.

Dr. Frachtenberg has performed a most valuable service in doing this work, and the Bureau, in promoting and issuing it, has again given evidence of its all-important function of serving as the great coördinator and clearing-house of American anthropology.

A. L. KROEBER

When Buffalo Ran. GEORGE BIRD GRINNELL. Yale University Press: New Haven, 1920. 114 pp.

There is a distinct need in anthropological literature for the sort of book Mr. Grinnell has given us. A vast amount of ethnological data has been collected and published in a form that makes it valuable for the student of anthropology, but through these students there has grown

up another group who are also interested in civilizations other than our own and yet are not attracted by ethnological reports. This group includes not only the reader who wanders to other lands and other cultures for entertainment, but also people whose interest in primitive life is stimulated by museums and other exhibits. Formerly authors tried to satisfy this curiosity by publishing the folk tales and myths of primitive peoples. These volumes are intensely interesting and very necessary for an understanding of other cultures, but they lack that personal touch which Mr. Grinnell has given us in his book. He lets Wikis, a Plains Indian, tell the story of his life—and his life as typical of the Plains about seventy years ago is not linked up with any particular tribe. The story is told very simply. Mr. Grinnell makes no attempt to keep the idiom of the Indian, which would probably make the tale awkward and monotonous, but he has worked it over into smooth, simple language, using such words as Wikis may well have used and keeping the atmosphere splendidly. The story gives the most delightful glimpse of the everyday life of these people—a whole picture, not dissected and put into ethnological cubby-holes. The play of the children is told by one of those who took part in the games; life in the lodge and the duties of the various members of the household are described by the boy who became more and more important in the family life as he grew older; then as he approaches manhood his uncle instructs him in his duties and responsibilities; now Wikis goes hunting and later on the warpath and at last he marries Standing Alone, the little playmate whom he had described as “pleasant and nice and always busy” when they had played at keeping house in childhood; then the hard times begin and the wars with the whites—“Of that bad time and of what followed that time, I do not wish to speak, and so my story ends.”

When we read accounts of primitive life with customs that seem at first strange and queer, we forget that they belong to people like ourselves. This fact is brought home very forcibly in Mr. Grinnell's book—these are real human beings, they have their joys and sorrows, their pleasures and trials—they are not so different from us after all. It is most important to emphasize this fact especially for those who never have the good fortune of living in such a community and seeing this common humanity for themselves.

There are others who have stores of information like that of Mr. Grinnell—can not the success of this life of Wikis, the Plains Indian, induce them to give us similar accounts of the people they know so well?

ERNA GUNTHER

AUSTRALIA AND OCEANIA

Die Gliederung der Australischen Sprachen. By P. W. SCHMIDT, S. V. D. Vienna, 1919.

In this volume Father Schmidt has republished (with some additions) his articles on the interrelations of the Australian languages which appeared in *Anthropos* for a number of years beginning with 1912. The work represents the first attack on the languages of the continent as a whole by a competent philologist, and its importance is therefore manifest. Father Schmidt has handled the sorry material available with his wonted expertness and true linguistic feeling. His general conclusion is that the idioms of the larger southern portion of the continent are more or less related genetically but that those of the northern part belong to a number of disparate stocks.

The author's method departs from the established one of instituting comparisons with a view to accepting relationship where similarities are numerous enough and substantiable by sound shifts or morphological analysis, but denying relationship, or suspending judgment regarding it, when the similarities are so few or irregular that they might be due to coincidence or when there is direct or indirect evidence of borrowing. Instead, he assumes several distinct waves of immigration and migration each bearing a totally new language or set of languages, and explains both the similarities and the dissimilarities between the existing languages as due to displacements, mixtures, borrowings, and other dynamic relations that have occurred between them. The populational strata are those of Graebner's theory. Thus the dialects of Victoria are largely a survival of the speech of the carriers of Graebner's oldest Australian culture; the Yuin-Kuri group of the vicinity of Sidney and Newcastle represents the speech of Graebner's second or boomerang culture. The Narrinyeri of the lower Murray dates from the West Papuan or patrilinear totemic invasion; the languages of what Schmidt designates as the Central group—from the Darling northwestward to a line connecting latitude 17° on the east coast with longitude 134° on the south coast—belong to the matrilinear moiety culture. Wiradyuri and Kamilaroi represent a mixture of the last three strata. And so on.

Schmidt thus never really approaches the problem of genetic relationship. Having postulated separate former blocks of speech, some of them apparently by no means uniform themselves, he traces the remains and mixtures of these. This is refined speculation, not inductive empiricism. What is needed first is comparison of the languages as they are

given, not a breaking up of them into imaginary elements and the reconstruction of these into a picture of the past. It is no wonder that Schmidt's linguistic findings corroborate Graebner's ethnological ones so strikingly, for he really begins with the latter's assumptions.

It is of course important never to overlook the possibility of borrowing and mixture, that is, of the assimilation of originally distinct tongues. Objective proof of assimilation is however in the nature of things much harder to bring, where direct historic records are lacking, than proof of dissimilation such as is known to be always operative in some degree and at times to be rapid. The latter process Schmidt hardly considers, so busy is he in the pursuit of his intricate theories.

The question of the relationship of the Australian languages therefore remains unanswered. Some years before Schmidt's results began to be published, the reviewer undertook a survey of the same field. This study was never completed; but it led him to the conviction of a high degree of probability that all the languages of the continent were only variations of a single original tongue, with the exception perhaps of those about Cape York. This conclusion, it seems to him, Schmidt's own tabular data now corroborate. It is true that the languages north of latitude 18° or 20° (with which Arunta must be included) are more divergent from one another and from the remainder than the latter (Schmidt's "South-Australian" main division) are from one another. But there are typical southern words which recur again and again in the north, and there is no northern language which does not contain some of them. Why the dialectic dissimilation should have been greater in the north, it would be impossible to say without careful analysis and perhaps without better data. The cause may have been greater exposure to non-Australian speech, or even admixture with it, or some entirely different factor. But it would seem wisest to collect all possible similarities and see to what inferences they lead before proceeding to specific explanations of the dissimilarities on the basis of sweeping assumptions.

Although Schmidt's broader findings are accordingly vitiated through his having fallen under the seduction of the Graebner dogma, yet many of his detailed results will stand. His grouping of the languages is usually convincing. Some of his correspondences between ethnological and linguistic areas and dividing lines are no doubt historically significant. Wherever he escapes from hypotheses, his penetration and mastery of genuine philological technique render his work valuable. His systematized presentation of the most important of the available data will much facilitate future comparative studies; and his map is a joy and a blessing.

It is remarkable that there does not exist a single first-class monograph or body of material on any one of the native languages of this continent. This distressing fact should burn into the minds of all who profess interest in learning and science. Perhaps the realization that the first scholarly attempt to deal seriously with these tongues was made in German by an Austrian priest will stir Australians into effort.

A. L. KROEBER

The Northern D'Entrecasteaux. D. JENNESS, M. A. (Oxon.) and the late Rev. A. BALLANTYNE. With a Preface by R. R. MARETT. Oxford: Clarendon Press, 1920. 219 pp., 35 half-tones, 7 figs., 2 maps.

This volume represents the first instalment of Mr. Jenness's report on his expedition to the northern part of the D'Entrecasteaux Archipelago, off southeastern New Guinea. It is to be supplemented by publications on the folk-lore, songs, and language. In his work Mr. Jenness enjoyed the coöperation of his brother-in-law, the late Rev. Ballantyne, whose long residence on Goodenough Island and consequent knowledge of the native language made him a most desirable collaborator; and their joint labors have enriched ethnographical literature with a contribution to our knowledge of a practically unknown region.

The culture of Goodenough Island and its neighbors is of great simplicity as compared with other sections of the same general area, though in a broad sense there is conformity to the New Guinea pattern. The natives are horticulturists depending mainly on the yam crop and eking out a livelihood in bad seasons by making sago. Social life centers in the family and the hamlet. There is patrilocal residence with local exogamy but no trace of a sib system, let alone of matrilineal descent. The kinship nomenclature is of the Hawaiian type. Clubhouses are lacking, and while both sexes undergo a puberty rite this does not involve any spectacular performances. Decorative art is almost wholly devoid of symbolic interpretation. Magic flourishes, while religion is limited to a belief in spirits none of whom attains the dignity of a genuine deity. Though technology is treated somewhat summarily, several points of interest are worth noting. Fire is ploughed; canoes are of the built-up and the simple dugout variety, the latter being adzed out without the aid of fire; and coiled pottery is rather extensively manufactured, though without any variety of shape and for purely utilitarian purposes.

Mr. Jenness has presented his results with obvious care and may be sure that his future publications, both in the same domain and the

widely different Eskimo field, will be received with respectful attention by his colleagues.

ROBERT H. LOWIE

SOME NEW PUBLICATIONS

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Meissner, Bruno. Babylonien und Assyrien. (Kulturgeschichtliche Bibliothek, herausgegeben von W. Foy, I. Reihe: Ethnologische Bibliothek.) Erster Band. Heidelberg: Carl Winters Universitätsbuchhandlung, 1920. viii, 466 pp., 138 figs., 223 pls. and ills., 1 map.

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DISCUSSION AND CORRESPONDENCE

THE CENTRAL ARAWAKS: A REPLY TO DR. ROTH

IN the issue of the *American Anthropologist* for July-September, 1920, pp. 291-3, Dr. Roth published some "Comments" which had appeared February 22, 1920, in the *Daily Chronicle*, Demarara, as a "Book Review."

When "The Central Arawaks" was published I sent Dr. Roth a copy and asked him to review it. He replied, October 9, 1919, that "it would hardly be fair to Melville and Ogilvie" for him to do so. Knowing that he had spent six months among the Wapisianas after I had visited them and that he would see Melville and Ogilvie to whom I had also sent copies, I had reason to expect the honest criticism I coveted. The unexplainable animus exhibited and the character of his "Comments" destroy any value they might otherwise have, as the following letter indicates. It will be observed that the letter, which is published here by permission, was written for another purpose.

November 15, 1920.

DR. CLARK WISSLER, President

American Anthropological Association
Washington, D. C.

Dear Dr. Wissler: Permit me to supplement my letter of November 13 with an additional observation. I have just read Roth's criticism of "The Central Arawaks," in No. 3 of the A. A. and am struck by his remark on p. 292, "The author should remember that the history and language of any of our Guiana tribes is not to be picked up by a few months' cursory travel, with notes and queries obtained en route, even when the expedition is backed by a lavish expenditure of money." This is another illustration of what I took the liberty of pointing out in my previous letter to you: this supercilious statement has no bearing whatever on the problems under discussion, but is simply a personal affront to Dr. Farabee and casts a serious reflection on the Institution to which he is attached. The concluding paragraph is just as insulting. The bold assertion of Mr. Roth that "the result has been a failure" does not at all follow from his preceding comments; he merely rectifies a few points of detail, none of which is fundamental, but a book is not to be regarded as a failure because it contains errors and even hundreds of errors. It is just this type of book which many times has advanced the progress of science, while numerous books, correct as tailors' dummies, merely exist on shelves, and have never exerted any influence. Mr. Roth does not give any proof for his grotesque generalization, nor does he

produce the evidence for his charge that the "grammar and language" (a very logical mode of speaking!) are unreliable: criticism must be specific and exhaustive, but not dogmatic and generalized. . . .

Very truly yours,

(Signed) B. LAUFER

FIELD MUSEUM, CHICAGO, ILL.

Nevertheless Dr. Roth has inadvertently rendered me a very great service. He will agree that Melville and Ogilvie are the only authorities on the region under discussion. He has taken my publication back to my original authorities, on the ground where, to some extent, he could make comparisons with his own observations, and the only points he finds to criticize in the whole material and social culture of the four tribes are: (a) "A couple of methods of catching small animals and deer . . . neither of these devices have been hitherto seen or heard of . . ."; (b) "the bird trap lacks the upper portion of the peg . . . upon which the whole delicacy of the trap depends"; (c) "the form of spring-basket fish trap . . . is unknown."

All of the other ethnological material may be accepted since it has been passed unchallenged by the highest authorities. Furthermore there is no new information at hand from this source except that there is an "upper portion of the peg." The following facts must also be kept in mind: (a) No one had previously investigated the methods of catching small animals and deer in vogue among these people; (b) an Indian drew the picture of the bird trap (I am sorry the doctor did not supply the missing part); (c) Saturday, January 31, 1914, Ogilvie found a spring-basket fish trap at the third Mapiidian village, and on Sunday morning, February 8, 1914, our old Taruma guide brought in two Haimara fish which he had caught in the spring-basket traps he carried with him. Our Wapisiana boys said that their people also used such traps, but I did not see these employed among them. We took four boys on our travels in the interior among other tribes for five months; they were greatly interested and called our attention to similarities and differences in cultures. We recommend our method of study to those who think they are close observers.

About one third of Dr. Roth's review of a book on ethnology is given to four possible mistakes in the identification of more than a hundred plants and animals. He indeed says: "The value of the list of fish poisons is inappreciable in view of the absence of any scientific identification of the plants." I regret that no botanist has identified the plants used for fish poisons. I published the local names with sufficient

description for their recognition. I gave the ethnological data concerning the extraction and use of the poisons and also I described the effect of the poisons on the fish. I still think it was well worth doing even if I could not supply the Latin names in parentheses. I am surprised that Dr. Roth, a medical man, has not taken advantage of his wonderful opportunity to study some of these poisons from the point of view of their medicinal value.

Dr. Roth makes the broad statement that my *Wapisiana* linguistic material is "hopelessly inaccurate." He does not claim personal knowledge but speaks upon the authority of Melville without furnishing any evidence whatsoever. For twenty-four years Melville had been most intimately associated with the *Atarois*, while Ogilvie had been living and working with the *Wapisianas* for fourteen years. Ogilvie had made collections for museums with scientific notes on the use of the specimens. He had made a *Wapisiana* vocabulary of useful words along with their grammatical constructions in sentences. When he and Melville disagreed about *Wapisiana* I tested the matter as far as possible with the Indians and accepted the better authority.

In the last paragraph Dr. Roth speaks of "one bright spot . . . the excellence of the illustrations." I am in full agreement! Several of the best illustrations are from Melville's negatives and his name is published *with the photographs*. "One plate [there were five] . . . requires explanation" because it has been published elsewhere with a different legend. He finishes with a flourish and an interrogation, "which is correct?" Now, the good doctor knew at the time he was writing that it was Melville's photograph (he had seen Melville), that I did not write the earlier legend, and that I was in no way responsible for its first publication (the journal referred to said I was still in the field).

The "lavish expenditure of money" is considered a legitimate argument against any American in many countries, but Dr. Roth has the honor of being the first to use it in scientific discussion. But how inappropriate in southern British Guiana where I lived and traveled for five months without seeing a penny! No one can pay for lodging or assistance at Melville's place where Dr. Roth made his headquarters for six months.

Note Dr. Roth's exact scientific methods. He begins by misstating the title and contents of the book. He refers to articles in the *American Anthropologist*, the *Journal of the Royal Anthropological Institute*, and the "*Philadelphia Museum Journal*" (there is no such publication) without giving dates. He criticises the "whole of the area under considera-

tion" and refers to Mr. Melville only as authority, yet neither he nor Mr. Melville ever saw two of the four tribes under consideration. Neither of them ever visited the Wai-Wais, yet he says a certain trap is met with among the latter. Neither of them ever saw the interior forests, yet he is bold enough to say that certain trees do not grow there. It is to be observed that Dr. Roth does not quote Mr. Melville.

WILLIAM C. FARABEE

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INDIAN CORN HILLS

As a footnote to the neglected topic of Indian corn hills, described in such an interesting fashion by Messrs. Delabarre and Wilder (*American Anthropologist*, July-September, 1920), attention may be called to the existence of similar remnants of Indian agriculture in the vicinity of Mohegan, Conn. Unfortunately the writer did not make any of the careful measurements submitted by the authors of the article referred to, but perhaps memory will serve for a few outstanding features.

The corn hills observed, during a few days visit to Mohegan last August, are in two localities. One of them is an eight to ten acre pasture on high ground, a few minutes walk a little to the southeast of the Indian meeting house. The mounds which stud this field are, from the point of view of order, intermediary between those described by Lapham and the hills referred to at Assonet neck. They probably resemble quite closely those described at Northampton, Mass.

In the second locality, which is also pasture but farther towards the Thames River, and bordering on wooded land, the hills are quite irregularly scattered and few, if any, can be said to be in rows. It is said that mounds also existed in a field close to the first locality mentioned, but within a year or two the white man's plow has entirely obliterated all traces of them.

It is of no little significance that there is an unbroken tradition at Mohegan regarding these corn hills. Anyone asked will point them out as such. As soon as an opportunity presents itself the writer will endeavor to examine them with more care.

A. I. HALLOWELL

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A HAIDA KINSHIP TERM AMONG THE TSIMSHIAN

ON page 269 of the *American Anthropologist* for 1920 (No. 3) I suggested that the Nass River vocative *hadu*^{vi} "father," used by female

children only, was borrowed from the corresponding Haida term *ha'da'i*. Since this statement was published, I have received a note from Mr. William Beynon, a Tsimshian of Port Simpson, B. C., which turns the hypothesis into a practical certainty. He writes:

Your theory, I am sure, is correct. I was struck by this term being used only by the female children of Haida parents, three of maternal descent and one paternal. These have been adopted into the Tsimshian tribes. *ha'ət* and *hädi* are the terms used by these female children to their fathers. On making inquiries among them as to the reason the term was not general among all the Tsimshian, [I learned that it was not a true Tsimshian word] but was a term introduced by those of Haida origin. There are only four such families there, but strong enough to show or bear out your theory on this.

This is an excellent example of infiltration into a tribe of a kinship usage from an alien tribe by way of intermarriage and adoption. Among the Tsimshian proper the Haida term is still felt as an intrusive element. Among the Nass River people it has already become so well established as a native term that an Indian like Mr. Calder is totally unaware of its Haida origin and proposes to connect it with the native term for "intestines."

E. SAPIR

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ANTHROPOMETRIC MEASUREMENTS

The following correction which was printed in *Science*, Jan. 7, 1921, is repeated here because it also concerns readers of the *Anthropologist*:

During the sessions of two International Congresses of Anthropology, in 1906 at Monaco, and in 1912 at Geneva, rules were drawn up for the standardizing of the more usual anthropological measurements. The work was undertaken in each case by a Committee, and the official reports were published by certain members to whom this duty was assigned.

The prescription of 1906 included measurements of the skull and of the head and facial features of the living. It was published in the French language by Dr. Papillault and appeared in the pages of *L'Anthropologie* (Vol., 17, 1906, pp. 559-572). The prescription of 1912 was the work of a larger and more representative Committee, which, aside from French, German, and Italian members, included members from Great Britain, the United States, Russia, and Switzerland, countries not included in the former report. The official reporters of this prescription, which included measurements of the living body, exclusive of those of the head and face, were Drs. Rivet, Schlaginhaufen, and Duckworth, who published their reports in French, German, and English respectively.

Having these data in mind I was led to state, in the preface to my recent

Manual of Anthropometry, that the official reports of the prescription of 1912 were published only on the other side of the Atlantic, and appeared in an American journal for the first time in 1919, when Dr. Duckworth's official report was reprinted by Dr. Hrdlička in his new *American Journal of Physical Anthropology*.

While this statement, so far as regards only the *official* reports, is strictly true, I should have mentioned also that unofficial, but equally accurate and trustworthy, reports were published in other countries, and especially should I have cited the report of Dr. MacCurdy, also a member of the Committee which drew up the prescription in Geneva. His report in full of this prescription was translated by him at the time of the Congress from Dr. Rivet's personal copy, and appeared during the same year, in both *Science* and the *American Anthropologist*. Had I noticed this in time I would certainly have brought it to the attention of the readers of my book, and wish to take this opportunity to rectify my unintentional neglect.

The citations referred to are the following:

Science: N. S., Vol. 36, No. 931, Nov. 1, 1912, pp. 603-608.

American Anthropologist: Vol. 14, No. 4, Oct.-Dec., 1912, pp. 621-631.

HARRIS HAWTHORNE WILDER

SMITH COLLEGE,

NORTHAMPTON, MASS.,

December 17, 1920

NOTE ON CADZOW'S "NATIVE COPPER OBJECTS OF THE COPPER ESKIMO"

THE specimens that are described and illustrated by Mr. Cadzow (Museum of the American Indian, Heye Foundation, 1920, Msc. Pubs. No. 8) were obtained in 1919 at Fort Norman on the Mackenzie River, where a small party of Copper Eskimos was spending the summer.

For nearly twenty years the Copper Eskimos have been in almost continuous contact with white men, and their culture has undergone a profound change. Now there is hardly a bow in the country, iron has superseded copper in nearly everything, and the old style of dress is being rapidly abandoned. Even in 1911 the natives had begun to manufacture copper implements for sale. Dr. R. M. Anderson, who spent the summer of 1911 in Coronation Gulf, tells me that a Coppermine River Eskimo tried to sell him a copper tomahawk modelled after the Indian weapon. By 1914, when the southern party of the Canadian Arctic Expedition established its headquarters in Dolphin and Union Straits, copper had ceased to be used, other than as rivets, in all but arrows and the fishing implements.

Most of the specimens, then, that Mr. Cadzow illustrates must have been manufactured for sale. The majority correctly reproduce the ancient types, but the snow-knife (Plate Va), which is a model of the

bone or horn knife, *havinyak*, used for chopping up the snow for the cooking-pot, never, as far as we know, had a copper blade. The adze figured in Plate VIII would probably have had in actual use a protecting band of seal-skin under the lashings to prevent them from being cut through. I am not sure whether harpoons like the one figured in Plate IX ever had copper shanks; normally that portion of the weapon was of caribou antler. The seal-indicator, to be complete, should have a small round disc near the bottom, although this feature is occasionally lacking. The remaining specimens seem not to differ from the genuinely old types scattered in different museums throughout America.

D. JENNESS

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THE CLASSIFICATION OF AMERICAN LANGUAGES

THE recent article by Dr. Boas (*American Anthropologist*, N.S., vol. 22, pp. 367 et sq.) is a discussion of the theoretical point of view one should adopt in classifying American languages. On the whole I am very much in sympathy with his remarks; see my paper on American languages in the *Journal of the Washington Academy of Sciences* (vol. VII, pp. 222 et sq., 1917). But there is one point which I think Dr. Boas overlooks when discussing the borrowing of morphological features, admitting that he has made it very plausible that a number of borrowings occur where they had not been previously suspected. And this is that, if the morphological resemblances between two supposedly distinct but contiguous stocks were entirely due to borrowings, by the doctrine of chances we should expect to find similar borrowings in another supposedly distinct but contiguous stock. And this is demonstrably not the case in at least certain instances. Thus Athapaskan, so far as we know, has been in just as intimate contact for a very long period with Salishan and Esquimauan as with Tlingit; but there is not the slightest resemblance structurally between Athapaskan, Salishan, and Esquimauan. On the other hand admittedly there is a very decided structural resemblance between Athapaskan and Tlingit, even if the amount of vocabulary held in common is very small. Or again, Algonquian has been in just as intimate contact with Iroquoian, Siouan, and Muskogean for at least several hundred years as it has with Esquimauan. Yet structurally Esquimauan and Algonquian resemble each other, and similarly Siouan and Muskogean; but observe that the first pair does not resemble the second pair nor does either member of the first group resemble either one of the second. Similar cases occur in the Southwest and also Northwest.

Now if the above were entirely due to borrowing we should expect to find resemblances equally distributed where the supposedly distinct stocks are contiguous. If the resemblances are confined to one or two features, they may safely be ascribed to acculturation; but when there are far-reaching structural resemblances between two or more supposedly distinct (and especially contiguous) stocks we may legitimately infer an ancient genetic connection which perhaps can no longer be proved owing to very early differentiation. The actual application of the above principle on a large scale is quite another thing. We are probably not yet in a position to make final announcement of such ancient genetic connections, though tentative results might properly be made public. The recent efforts to prove genetic connections on a large scale have been deplorable from a methodological point of view. Enthusiasts have cast all prudence to the winds; still their work has not been entirely in vain, for they have at least called attention to problems which must be faced sooner or later.

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SOME CRITICISMS OF CURTIS'S "SONGS FROM THE DARK CONTINENT"

IN the recently published *Songs from the Dark Continent* by Natalie Curtis (Schirmer, 1920) we find an anachronism quite surprising in this day of scientific exactness. The cover design, the illustrations of textiles, of carved figures and other objects, are all taken from materials found among the Bushongo, a tribe located just south of the Congo River and east and north of the Kassai, while the songs and the young men eulogized are of the Ndau and Zulu tribes. The Ndau is a small tribe in Portuguese East Africa near the coast, and the Zulu are farther south. There is such a great distance between the Bushongo and these east-coast tribes that there is not the least justification for using such illustrative material. The art work of the Bushongo is entirely distinctive, and if it is shared by other tribes that fact has not been recorded. The report of Torday and Joyce is our main source of information on the Bushongo.

The ivory work of the Mangbettu, considerably to the northeast of the Bushongo, also represents a high development, but very different in design and technique. There are no correspondences between the products of the two peoples so far as exhibited specimens indicate.

The early Bantu migrations are now so distant in time and so mythical

that to suppose the Ndaou or Zulu to be directly enough allied to such a tribe as the Bushongo as to be entitled to a "hereditary" use of their art designs is to draw upon the imagination to an unwarrantable extent. A comparable case would be to illustrate tales of the Plains Indians with art designs from the North Pacific Coast Indians. In one case both tribes are Negroes, in the other both are North American Indians—hardly an adequate basis for the use of art designs.

The use of the term "Central African" as a caption to the photographs is sufficiently indefinite to cover almost any material which would make the book pleasing in effect. As a geographical term "Central Africa" includes the vast area south of the Soudan to Rhodesia and middle Angola, and east from the coastal plain along the Atlantic to the lakes and the great central range of mountains. Within this area there is to be found wide diversity of culture and of type. The products of one part of the region are not characteristic of other parts. As for calling the Bushongo art work typical of "Central Africa," this in itself is most misleading. To imply that the Bushongo art well represents the work which Ndaou or Zulu might accomplish is even more misleading.

As for the value of the musical contribution to the study of primitive music, I am not competent to judge. In appearance and arrangement the book is most attractive, the reproductions of textiles and wood-carving unusually well done. The appeal for Hampton Institute is a very telling one and the stories of the young men sufficiently sentimental to turn their heads completely.

The photographs and reproductions used in this volume closely resemble specimens in the Africa Hall of the American Museum of Natural History, New York, and yet nowhere in the volume is there any acknowledgment of their source. It is customary to show this courtesy in any instance in which an author's own material is not used.

AGNES C. L. DONOHUGH

NEW YORK CITY

NOTE ON THE HUNTING TERRITORIES OF THE SAUK AND FOX

WE have all followed Professor Speck's discussions of the hunting territories of Algonquin Indians with interest, and it is for this reason that I venture to add the following quotation from Marston (1820) on the Sauk and Fox regarding this point: "it being previously determined on in council what particular ground each part shall hunt on" (most readily accessible in Blair, *Indian Tribes of the Upper Mississippi and the Great Lakes Regions*, vol. II, p. 148). It is most unfortunate that we do

not know exactly what "each part" was. However, so much at least is clear, namely, that the hunting territories were not hereditary.

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PRESSURE-FRACTURE PROCESSES: AN OMISSION

I NOTE that in Mr. W. H. Holmes's "Handbook of Aboriginal American Antiquities, Part I, Introductory; the Lithic Industries" no mention or reference is made under pressure-fracture processes (Ch. xxx) to the method described and illustrated by Roth from northern Queensland of obtaining the ultimately fine cutting edge by tapping the stone with a piece of flat hardwood. He saw it employed in the manufacture of stone chisels, and has published a description of it in *Domestic Implements, Arts, and Manufactures*, Brisbane, 1904, a work that Mr. Holmes has omitted from his bibliography.

WALTER E. ROTH

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BRIEF COMMUNICATIONS

NOTE ON THE NIGHT CHANT AT TUWELCHEDU WHICH CAME TO AN END ON DECEMBER 6, 1920¹

EVEN when a ceremonial has been as thoroughly described as the Night Chant by Washington Matthews, subsequent observations are not without significance as part of the historical record. A brief report, therefore, of a recent *naakhái*, the concluding dance in that nine day ceremony, indicating a few variations from Matthews's account, may be of interest. Of interest also is the relation of the Tewa and Hopi of First Mesa to the Navaho.

Word of the dance was brought to First Mesa by a visiting Navaho family on their way to a "Fire dance" in the west. On November 29, my Tewa host in Sichumovi said that word had been sent to him from Tewa that they were thinking there of going to Tuwelchedu to dance. My host belonged in the Tewa group who danced "Navaho"; he was in fact the dance director. Since during the next few days he had to be away from the mesa his Tewa colleagues finally gave up the idea of going to Tuwelchedu. Had they gone, they would have formed one of the many dance sets assembled from different parts of the country. In other words, these Tewa-Hopi would have constituted an integral part of the Navaho ceremony.

As it was, only a few from First Mesa went to the dance, Tom, the Hopi trader, in his automobile with a load of apples and bottles of a sweet, pink drink, two families in wagons, and a half dozen men on horseback. We made a fire for ourselves, the back part of the wagons serving as box seats, and there was an interchange of food and coffee and Hopi jokes—against the enveloping Navaho a little self-protective circle, a not uncritical circle.

It was of the dancing we were critical. It did not come up to Pueblo Indian standards. "They pay no attention to each other, and they don't know how to step," was the comment of more than one Hopi. One Navaho set was commended as dancing "almost like Zuñi."

To the Hopi ear the songs of each dancer set were different—to me, as to Matthews, they seemed identical or very similar. The Hopi appeared to have scant knowledge of the ritual. My Tewa friend who

¹ Tuwelchedu is about thirty miles southeast of First or East Mesa.

spoke Navaho did not know the names of the war gods or anything about the impersonations except that they were called *hastinu*, old ones, although he thought that the third masked figure in the late afternoon appearance represented, not *hastseoltoi*, but *estsánatlehi* or, as he said, *nale*, man-woman. This interpretation is sometimes held, to be sure, by Navaho laymen, according to Matthews. Incidentally I note that in describing *estsánatlehi* as Changing Woman, Matthews fails to bring out the fact that the change is hermaphroditic; such it is at least in Tewa opinion. The Tewa, by the way, have their own warrior woman, *pohaha*, who, as her mother was wheeling her hair, rushed out to fight, with one side of her head done and the hair of the other side hanging, in the way in which the Zuñi *kolamana* (god, man-woman) is represented.

My Tewa friend displayed ignorance about the ceremonial in other particulars; he thought, for example, that the patient had been cured the previous year. How much of the ceremony of the preceding days he knew about I do not know, but even if he knew about its occurrence, he certainly did not think of it as in itself the curing ceremony. The patient had been cured, he thought, of "a *k'atsina* sickness," i.e., he had tried different doctors and their medicines and the medicine that cured him was *k'atsina* medicine, proving that his sickness had been *k'atsina* sickness, therefore he was having the *k'atsina* ceremony. It would be extremely interesting to learn if this is mere Pueblo interpretation or if there is something to it from the Navaho point of view, information not secured by Matthews. Matthews has little to say, we may note, about the kind of sickness for which the Night Chant is held, or why it is chosen in preference to any other curing ceremonial.

The two main variations in the performance, as I saw it, from the performances described by Matthews were, first, that the brush green-room opened, not to the south, but to the east, and second that the patient sprinkled the First Dancers, not from right to left, but in the usual sunwise direction, from left hand up left arm across chest and down right arm to right hand.

All of the following particulars are indicated by Matthews as characteristic of one performance or another, or are points of very minor detail. The new hogan was circular. . . . Sprinkling of the dancers by the patient, after the sprinkling of the First Dancers, was extremely perfunctory, in fact there was nothing in his tray basket to sprinkle. . . . The dance figure took less than three minutes to execute, the number of repetitions by each set was extremely erratic, from four or five to nine or ten. "Each set will repeat four times and only four times," a Hopi

had persisted in saying to me, until I made him count with me the repetitions of one of the sets—a little illustration of how the Pueblo Indian is ever given to standardizing.

No observer of Pueblo Indian dances could have failed to be critical, not merely of the dancing, but of the costuming in this dance. The Zuñi or Hopi sense of style was lacking. One set of dancers impersonating the male *yei* wore flesh-colored flannels. In some cases a kerchief took the place of the pendent fox skin. Impersonators of the female *yei* were mostly dressed in shirt and trousers. In some cases a woman's skirt was worn over the trousers; in some cases the impersonator was nude and kilted, like the male impersonation. A kilted female impersonation dancing next to a be-skirted impersonation went far to detract from the uniformity of design which appears to be essential, in the Pueblo view, as in our view, to a handsome appearance.

The beard or fringe of the mask of the female impersonations was made of strings of jet, a row of abalone-shell fragments giving the finish where the fringe was fastened to the mask.

While the dance paint is on, a Navaho dancer, like a Zuñi dancer, must remain continent; but the Pueblo Indian is more careful, I think, in washing off his dance paint. The morning after the dance at Tuwelchedu the dancers could be recognized by the traces of white paint still on their hands or wrists.*

The dancers may have been short on water, to be sure, although the place where we were congregated was possessed, as you might expect, of a spring, a spring belonging to Hastin Nes, step-father of the patient.

Hastin Nes was said by the Hopi to be a *kiaani* clansman, his wife, the mother of the patient, a Tobacco-Rabbit (*k'achin*) clanswoman, and a Hopi woman. The Tobacco-Rabbit clan of First Mesa was described in this connection as having other Navaho affiliations. Tapulu, the legendary village chief who is said to have called in men of Oraibi and Walpi to destroy his town, Awatobi, was a Tobacco clansman. Of the attack, Tapulu had warned his clanspeople, the story runs,¹ and they left their mesa to scatter among the Navaho to the east, i.e., in the direction of Tuwelchedu where "they became Navaho." Later some of these Awatobi-Navaho Tobacco people went to First Mesa. Together with the interesting fact of intertribal marriage appears in this connec-

¹ Between this story and Hopi folk tales there is little or no difference. I attach little or no historical significance to the story of Tapulu. The history of the relations between the Hopi of First Mesa and quite probably of Awatobi and the Navaho is undoubtedly far more complicated than the origin stories of clan and ceremonial indicate.

tion another fact of interest, but not of course a novel fact, namely that the Hopi carry their fondness for equating clans even into the clan system of the Navaho. This equation of the so-called Navaho Rabbit clan¹ and the Hopi Tobacco clan may be the source of the Tobacco-Rabbit clan classification that has puzzled observers.²

ELSIE CLEWS PARSONS

NEW YORK CITY

NOTES BY G. COMER ON THE NATIVES OF THE NORTHWESTERN
SHORES OF HUDSON BAY

The Southampton Island Eskimo.—These numbered 58 all told in 1899, inhabiting the southwestern shore from the Bay of God's Mercy to the southern end. That summer the steamer *Active* built a whaling station on the island and brought over one hundred natives from other parts of the coast to work for it. Three white men were also there for the greater part of the time. This occupancy proved fatal to the Southampton Islanders of whom, by the spring of 1903, only one woman and four small children were left. These were transferred to Repulse Bay by the *Active* along with the other Eskimo, when the station was removed to that point. Later the woman died, leaving at the time of writing (1907-9) only the four children—one boy and three girls—out of what, judging by the old dwellings, must formerly have been a considerable tribe. The children were adopted by Eskimo of the Aivilik tribe.

Burial Customs of the Southampton Islanders.—The body seems to have been laid head toward the east, with a wall of stones around it and a flat stone on top. Several of the implements which the deceased had formerly used were laid under a stone near the head of the grave and near by was another stone on which the mourners would sit while they talked to him. A man whom I knew, Kum-er-kaw-yer [Kama Kauya] by name, requested that, when he died, he should be buried in the ground-ice so that when the ice broke up and went out to sea he would go out with it; then his spirit would be able to look out for and protect his people when they were out on the ice or in their kayaks. Afterward those who

¹ In Matthews's list of Navaho clans ("Navaho Legends," *Mem. Amer. Folk-Lore Society*, v, 29-31, 1897) I find neither Rabbit nor *k'achin* included. The other clan mentioned in my notes, *kiaani*, is perhaps identifiable with Matthews's *kinai'ni*, High Standing (or Stone) House, a group said in the legends to live near such a house.

² See Kroeber, A. L., "Zuñi Kin and Clan," p. 144, *Anthrop. Papers Amer. Mus. Nat. Hist.*, vol. XVIII, Pt. II, 1917. The suggestion of Navaho provenience is supported by the fact that the classification occurs only among the Hopi. (This clan is extinct at Zuñi, and therefore the question so far as that Pueblo is concerned is doubtful.)

went hunting in either manner threw some gift into the water to Kum-er-kaw-yer's spirit supposing that success would attend them in consequence.

Methods of Carrying Children.—It is the custom of the native women to carry small children on their backs, and there are two ways of doing so. One is to let the child lie pressed against its mother's back with its feet forced up to its body, the knees well spread and held up by a strap, both ends being at her throat. The other way, generally in vogue among the Netchilik and also at Tununiq (Ponds Bay), is to let each leg of the child go down the sleeve of the woman's coat. In either case, of course, the garments of the mother are made to fit the requirements.

Social Advancement among the Iglulik Eskimo.—One of the young natives in the vessel's employ caught a wolf in a trap, and that night, in accordance with the custom of his tribe (the Iglulik), he slept with his clothes on. His position as a hunter was elevated in consequence. This custom prevails among the Tununiq or Ponds Bay natives.

Aivilik Birth Customs.—When a child is born the woman's husband should do no work for three days. Otherwise the child's body will be covered with bruised spots. The navel string must be severed with a piece of sharp white quartz instead of a metal knife.

Customs and Beliefs Noted at Cape Fullerton.—When a hunter finds a young seal born prematurely he saves the skin, and afterward, when the ground shakes or loud noises are heard such as thunder, he beats the ground with it and all becomes quiet again, the bad spirits all leaving.¹

When a bear kills a seal and eats it it would be supposed that the skeleton would be torn apart, but this is not the case. I have seen such a skeleton on the ice and have wondered how it could be preserved in a perfect condition, but the natives say it is the custom of the bear never to break the bones apart. They think this is done by the bear so as not to offend the seal's spirit or *Nude le a uke* [Nuliayuq], the goddess who is the mistress of life.

Natives of different tribes assert that when a deer drops its young prematurely it does not dig holes in the snow to procure its food for the remainder of the winter, but waits until another deer has cleared away the snow and has afterward left it. This is said to be in compliance with the laws of the goddess.

NOTES ON THE NEZ PERCÉ INDIANS

THE following notes were recorded by Livingston Farrand in August, 1902, the informant being a Nez Percé Indian named Jonas Hayes.

¹ See Boas, *The Eskimo of Baffin Land and Hudson Bay*, *Bull. Am. Mus. Nat. Hist.*, vol. XV, p. 146.

Dwellings.—In ancient times the tepees were covered with reeds woven together; the use of buffalo skins came later. The common form of dwelling was round accommodating only one or two families, but sometimes they constructed dwellings for several families, each having its own fireplace.

Food.—In summer they fished for salmon in Snake River and other streams of clear water. In September they went into the mountains to hunt and stayed there two or three months. Until horses were introduced, which happened when Jonas's father was a little boy, they made this journey on foot. The length of their stay depended upon the amount of game which they were able to secure. In the spring they dug roots. The best place for these is across the Clearwater (?) from Lapwai, beyond the Snake River. They obtained camas roots on the famous Camas prairie.

Naming.—A child was named at birth, but when a boy reached manhood he changed, usually adopting the name of an ancestor; but if he had acquired supernatural power he took the name from his helper.

The Supernatural Helper.—In former times a certain Indian became a prophet, communicating to the people knowledge which he claimed to have obtained from the moon and stars. It was in accordance with his directions that they sent their little boys, between the ages of six and ten, into the mountains alone. The boys would stay there one night, or perhaps three or four. Then the boy would hear a voice saying "There is someone standing by you." Turning round he would see a person standing near holding a bow and arrows, and this person would say to him: "Do you see my arrows? They are used to kill deer or any other kind of animal. I will give them to you. When you get home, you, too, must make arrows with which to kill things." He also gave the boy a song—an arrow song. The person that had appeared in this manner remained the boy's guardian spirit during the rest of his life. After acquiring power in this way the boy would make charms. Boys who did not go into the mountains to secure helpers were thought to be of no account. Girls were also sent into the mountains for the same purpose.

In order to increase his supernatural power a man from time to time sang his own medicine song, acquired in the mountains or elsewhere, and danced. He was assisted by others to whom he afterward gave presents. A man would kill his "tamanous" animal, apologizing to it afterward—but he would not eat of it. There were stories told of boys who had been carried away to live with the animals.

Dances.—Besides the dance just mentioned there was a war dance, participated in by all warriors about to take part in an expedition. Hunting dances were held in winter in order to secure good luck for the next hunt.

Shamans.—Shamans acquired power by fasting. As Jonas learned in his training fast, they had special styles of painting. His own colors were red and white. Yellow and black were the colors used for dancing in general; red, white, and yellow were the special war dance colors. Some few used black. There was no tattooing, nor did they pierce their noses, this they said being a Yakima custom. They did not wear ear-rings.

Marriage and Inheritance.—The parents of both parties exchanged gifts. The girl's father gave bags, food, and things of a like nature; the youth's father gave a horse, elk-teeth, and similar articles. In case of divorce the presents were not returned. Polygamy was common and depended on wealth. The widow inherited and if she remarried with the consent of her husband's family she could retain the property; if not, they took her inheritance. The bulk of the estate went to the oldest son.

Burial.—The dead were buried under stones. Feasts were given for the deceased by his family, but there were no dances. They might be put off for a year, and great stores of food were gotten ready for them. No food was buried with the corpse, only fine clothes, but horses were often killed, especially at the death of a chief. As a sign of mourning the hair was cut off at the neck and old clothes were worn, but there was no special paint used at that time.

SOME CHIPPEWA MEDICINAL RECEIPTS .

WHILE I was Indian Agent at Nett Lake, Minnesota, one of the Bois Fort medicine men, known as George Farmer Nebedaykeshigokay, allowed me to copy his medicinal receipts from his note book. These I give below, believing that, though they are not very scientific, they will be of interest to students. The receipts were written in the Chippewa (Ojibwa) language but in our characters. The Indian original is given first with interlinear translation and afterward a complete explanation in English.

I

Is-gi-ka-mi-si-gan.	Mush-gi-gi	ow	omisat od-ji-bi-ga-wit.	(a) Se-se-ga-dag,
boil in a kettle	medicine	this	stomach died trembling	swamp spruce
			in fit	

(b) o-si-si-ge-bi-nish, (c) shi-gwag, (d) ka-bi-sa-da-gi-sit, (e) mi-squa-bi-mag,
 bark of a small Norway pine white pine kinnikini
 willow that grows
 near the lake (pus-
 sy willow)

(f) mi-ti-go-mish, (g) anib, (h) mi-naig, (i) ni-naig-wa-dag, (j) sasibagwat
 oak white elm upland spruce balsam spruce sugar
 bagi dagonigate. Sa-gi-sigat ago-bi-son. Gi-sha-o-ti-sot.
 little put in something bad sore I cut with ax put
 bad sick put medicine medicine on too
 on

Explanation

This medicine is for pain in the stomach, also for fainting and fits of trembling. Make a tea of the following roots and barks by boiling or steeping in a kettle: swamp spruce, pussy willow, Norway pine, white pine, kinnikini, oak, white elm, upland spruce, balsam spruce, and add a little sugar to sweeten it.

II

Mash-gi-gi mis-gwi-wit mi-na: (a) a-sa-ti, (b) manasati,
 medicine bad blood (inside) give (or take) white poplar yellow poplar
 (c) wi-gwas, (d) winisik, (e) mi-ti-ko-mish, (f) wisa-gi-mi-ti-go-mish,
 white birch yellow birch a large oak a small oak
 (g) mis-gwa-bi-mag, (h) bi-gwa-dji-mi-squa-bimag,
 kinnikini the taller variety of kinnikini
 (i) ki-si-swa-ti-go-wit o-ti-ni-ga-sa.
 (and) all the trees south of you

Explanation

As a medicine for bad diseases of the blood boil the bark of the following trees and shrubs: white poplar, yellow poplar, white birch, yellow birch, large oak, small oak, small kinnikini, large kinnikini, and all the trees south of you.

III

(a) Adjimag, (b) mitigomish, (c) anib, (d) shishi-gi-me-wish, (e) asa edema
 ash oak white elm sugar maple put in tobacco
 we-da-bag dji-ga-tig. ko-ko-sa-wet (or ho-ko-sa-wet)
 east little close trees gonorrhea

Explanation

For gonorrhea make a tea of the root-bark of the following trees: ash, oak, white elm, and sugar maple; add a little tobacco and set the

solution just east of and quite close to some trees. When it is cool drink a cupful three times a day.

IV

Mash-gi-ko Medicine	(a) wish-go-bi-dji-big, horsetails	(b) ka-bi-sanigwe-iag horsemint
agwash-ga-tet ma-ni-ga-got (for) bad sick stomach or bowels bad sick by eating too much	ki-bish-gat constipated	mi-na-na. drink

Explanation

For a "bad-sick" stomach, caused by eating too much, or for constipation, drink a medicine-tea made of horsetails and horsemint boiled together.

V

Mash-gi-ki Medicine	ow ag-wash-ga-tet. this stomach (or bowels) drink	Mi-na-a o-na-bo-gan: (a) na-me-wash-gos, make in cup	native peppermint
(b) na-me-bin, another pepper plant	(c) ka-ga-gi-mish, slippery (or common red) elm	(d) ki-bai-mi-nah-ni-ha-gon, fern	(e) a-te-go-bin crow-pills (crowberry)

Explanation

A medicine for stomach trouble is made by drinking a cupful of tea prepared by boiling native peppermint, a rush pepper-plant, Minnesota fern, and the roots of the crowberry, and slippery elm (or common red elm) together.

VI

Waba-no-wa-ia-i Eastern	mash-gi-ki: (a) ma-ga-ni-bish medicine leaves	ba-gwanan sarsaparilla	ma-dji-mash-gi-gi this medicine
mi-na-it take it	mi-na-a. drink		

Explanation

Another remedy for fainting and fits, also used as a blood medicine, is to drink sarsaparilla tea, made from the leaves of that plant. My informant advised me that this remedy is called "Eastern Medicine," because it is the medicine of the Wabeno (Eastern) Society of his people.

VII

(a) Wi-ni-si-ba-gon, swamp tea plant (a low-lying plant with small leaves and running vine, growing in the swamps of Minnesota)	(b) sa-ga-go-mi-na-ga-shin, kinnikinin	(c) a-sa-te-odji-bi-ga-a-nit, poplar, white poplar root
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(d) ma-na-sa-ti, balm-of-Gilead poplar	(e) odja-gi-sot root	a-go-bi-son. apply on (afflicted parts)
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Explanation

This is a general remedy. Take the roots of the swamp tea plant, kinnikinnik, white poplar, and balm-of-Gilead poplar, and pound them into a pulp. Make this into a strong tea, and apply it to the afflicted parts by placing cloths on them and pouring the tea on the cloths so as to saturate them thoroughly. The pounded roots and bark are also applied hot from the steeping tray. It is a remedy much used in rheumatism and kindred diseases. This is taken in part from an oral explanation by Nebedaykeshigokay.

VIII

Ki-sha-o-ti-sot (For) cut foot	a-ko-bi-son: apply on	(a) Ok-i-ni-mi-na-gash, rosebush	(b) ka-wa-go-mish, bitter root
(c) mi-gwa-mi-ge-shi-na-gwag. elm	Mi-squi-wit for bleeding	badji little	mi-na-a. drink

Explanation

For a cut foot apply a tea made by boiling together roots of the rosebush, bitter root, and elm. A little of this tea is also taken internally in cases of bleeding.

ALBERT B. REAGAN

KAYENTA, ARIZONA

ANTHROPOLOGICAL NOTES

GEORGE W. GRAYSON

GEORGE WASHINGTON GRAYSON, whose death occurred December 3, 1920, was well known to American ethnologists on account of the assistance which he rendered all students of his people, the Indians of the Creek Confederacy, and the intelligent zeal he displayed in having a permanent record made of their customs, ceremonies, and everything bearing upon their earlier history. He was born in the year 1843 five miles northwest of the present town of Eufaula, in what is now the state of Oklahoma. He was a direct descendant of Robert Grierson, a Scotch trader at Hilibi town near the Tallapoosa river, Alabama, one whose character was highly extolled by Benjamin Hawkins, first United States agent to the Creek Indians, and all of his other contemporaries. Mr. Grayson's own parents were without education, but they were determined that their children should enjoy this advantage and at an early age sent the subject of this sketch and his brother to the Asberry Mission Methodist school on the North Fork of the Canadian River where they remained until they were sixteen or seventeen. At this time the chief and the head men of the Creeks determined to send five of the most promising young men of their tribe to Arkansas College, Fayetteville, Ark., now the Arkansas State University, and Grayson was one of those chosen. In a few months he became a leader in all of his classes and ultimately proved to be the only one of the five to take permanent advantage of the educational opportunity thus presented. Two years after his entrance, however, the Civil War broke out and he was compelled to return home, where, although still a mere boy, he enlisted in the Second Regiment of Creek Confederate Volunteers. He was rapidly promoted and when the war closed was Captain of Company K. His principal exploit during that period was in intercepting, at Pleasant Bluff, Ark., the steamer *J. R. Williams*, which was on its way to Fort Gibson with supplies for the federal garrison. At that time he was instrumental in saving the life of a white youth whom some of his men wished to kill, and ever afterward he looked back upon this act of humanity with the greatest satisfaction.

Soon after the close of the war Captain Grayson married Miss Anna

Stidham, daughter of Judge George W. Stidham, a Hitchiti Indian whose name is also well known to students of Creek ethnology for the services he rendered to that pioneer student, Dr. Albert S. Gatschet. Judge Stidham was a member of the Creek council which prepared the alphabet officially adopted by the Nation.

For a time Captain Grayson engaged in mercantile pursuits, but he soon gave them up to devote himself entirely to the affairs of his people. Not long after his marriage he was appointed Treasurer of the Creek Nation, a position which he occupied for eight years, and he was Secretary of the International Council of Indian Tribes, in which twenty-two different peoples were represented. He belonged to the Katcalgi or Panther clan of Coweta town and sat for that town in the Creek House of Warriors for more than forty years. For an equally long period he represented his nation before various committees of Congress. In November, 1917, he was appointed Principal Chief of the Creek Nation. Early in the summer of 1920 he suffered a stroke of paralysis and sent in his resignation on the ground that he was no longer able to do justice to the position, but it was not acted upon before his death.

ANTHROPOLOGICAL PUBLICATIONS OF THE CANADIAN ARCTIC EXPEDITION

THE Arctic Board, which is a body composed of a number of scientists in the employ of the Canadian Government, has been arranging for the publication of a series of scientific monographs based on the results of the Canadian Arctic Expedition, 1913-1918. The complete report is planned to take up sixteen volumes, many of which are subdivided into parts. A considerable number of the papers dealing with zoology and botany have already been issued.

The last five volumes of the series are to be devoted to anthropology. The complete anthropological schedule so far as it can be definitely planned at the present date is as follows:

VOLUME XII: LIFE OF THE COPPER ESKIMOS.

The Life of the Copper Eskimos. By D. Jenness (in press).

VOLUME XIII: PHYSICAL CHARACTERISTICS AND TECHNOLOGY OF THE COPPER ESKIMOS.

Part A: *The Physical Characteristics of the Copper Eskimos.* In part by D. Jenness (in preparation).

Part B: *Technology of the Copper Eskimos* (to be prepared).

VOLUME XIV: ESKIMO FOLK-LORE AND LANGUAGE.

Part A: *Folk-Lore, with Texts, from Alaska, the Mackenzie Delta, and Coronation Gulf.* By D. Jenness (in preparation).

Part B: *Comparative Grammar and Vocabulary of the Eskimo Dialects of Point Barrow, the Mackenzie Delta, and Coronation Gulf.* By D. Jenness (in preparation).

VOLUME XV: ESKIMO STRING FIGURES AND SONGS.

Part A: *String Figures of the Eskimos.* By D. Jenness (ready for press).

Part B: *Songs of the Copper Eskimos.* In part by D. Jenness (in preparation).

VOLUME XVI: ARCHAEOLOGY.

Contributions to the Archaeology of Western Arctic America (to be prepared).

MR. CHARLES P. BOWDITCH, one of the best known patrons of anthropology in America, and himself an authority on the Mayan hieroglyphs, died on June 1 in his seventy-ninth year. An extended notice of his life and his scientific contributions will appear in the next number of the *Anthropologist*.

MR. ARTHUR C. PARKER during the month of June made an examination and survey of a series of some three hundred flint pits and three large quarries near Cossackie, N. Y. The quarries and pits extend over a mile and cover the surface of a large ridge-like hill. Enormous quantities of rock had been excavated by the aborigines and the dumps cover the hillsides to a considerable depth. In his survey for the State Museum of New York, Mr. Parker located the stations where the flint was sorted, the testing stations and the workshops where the flint was worked into blank forms and finished points. In the quarries large blocks of flint were found ready for removal, together with hammerstones and chipped disks. No pitted hammerstones were found on the quarry hill and out of 1,000 hammerstones from the workshop sites only one was pitted.

So far as known at present the Cossackie flint sources are the largest in the state of New York. The discovery is due to Mr. Jefferson D. Ray of West Cossackie who while collecting arrow points traced the chippings from the workshops on the flats to the source of the material on the hill. Mr. Ray has placed his large collection of chipped flints in the State Museum.

MR. LESLIE SPIER, formerly Instructor in Anthropology in the University of Washington, has been appointed Assistant Professor of Anthropology in the same institution.

WE note with keen regret the death of Miss M. A. Czaplicka, the Polish anthropologist, a student of Dr. Marett's at Oxford and later lecturer at Bristol University. Miss Czaplicka is best known for her handbook on *Aboriginal Siberia*. She herself conducted an expedition to the natives of the upper Yenisei country. In the spring of 1920 she

visited the United States and made the acquaintance of many of her American colleagues.

ÉMILE HOUZÉ, Professor of Anthropology at the University of Brussels and at the École d'Anthropologie of that city, died at Brussels on April 15, 1921. Among other publications may be mentioned his papers on the physical anthropology of the Flemings and the Walloons, which date back as far as 1882 and 1888.

DR. RICHARD THURNWALD, who spent some time in California on his return from New Guinea in 1916, is *privatdozent* at the University of Halle a. S. He has just published an enlarged German edition of the paper on Banaro Society issued as vol. III, no. 4, of the *Memoirs of the Anthropological Association*.

HARLAN I. SMITH, Archaeologist of the Victoria Memorial Museum, Ottawa, Canada (the national museum of Canada) is continuing his field studies of the ethno-botany, ethno-zoology, ethno-mineralogy, medical practices, and general material culture of the Bella Coola which he began last year.

DR. CARL E. GUTHE, of the Carnegie Institution, returned early in June from a four months' field season in Guatemala. He inaugurated the archaeological excavations of the Institution in the Maya field, reporting a successful preliminary season at the historic ruin of Tayasal, near Flores, in the department of Peten.

SIR J. FRAZER has been appointed President of Section H (Anthropology) for the meeting of the British Association for the Advancement of Science at Edinburgh, September 7-14. "The Origin of the Scottish People" will be one of the subjects of discussion at that meeting.

ON motion of the Prime Minister of Canada Vilhjalmur Stefansson recently received the thanks of the Canadian government for his public services as a result of and in connection with his explorations during the years 1906-1919. He has also been awarded the Founder's medal by the Royal Geographical Society.

THE Academy of Science and Letters of Sioux City, Iowa, has arranged a weekly lecture program for the present year, including the following subjects of interest to anthropologists: "The culture areas of the early Iowa Indians," by Prof. Charles R. Keyes; "The last stand of the Sioux," by Hon. Doane Robinson, State Historian, Pierre, S.D.; "Survey of prehistoric man," by Prof. H. G. Campbell, Department of Philosophy, Morningside College.

IN a letter to Dr. J. W. Fewkes, Chief of the Bureau of American Ethnology, Mr. Ralph Linton, who is engaged in archaeological work under Prof. H. E. Gregory, Director of the Bernice Pauahi Bishop Museum of Honolulu, Hawaiian Islands, reports the discovery, in the Marquesas group, of a large rock with pictographs of a style which is decidedly non-Marquesan. This rock is at one end of an enormous structure decorated with heads of regular Marquesan form, which Mr. Linton regards as the highest development of Marquesan stone work. It is a series of three platforms, the first 180 feet long, 40 feet wide, and 10 feet high, built on a hillside. These stones are large and accurately fitted, the second terrace being decorated with gigantic stone heads inserted in the masonry at irregular intervals.

YALE UNIVERSITY has granted leave of absence for 1921-22 to Professor George Grant MacCurdy, and on June 18th he sailed for Europe to assume his duties as Director of the recently established American Foundation in France for Prehistoric Studies. The School opened at the rock shelter of La Quina near Villebois-Lavalette (Charente) on July 1st.

DR. EARNEST A. HOOTON has been appointed Assistant Professor of Anthropology at the Harvard Medical School.

SIX Hunterian lectures on the "Principles of human craniology," illustrated by specimens and preparations, were delivered by Professor Arthur Keith at the Royal College of Surgeons, London, during January.

AT the Chicago meeting of the American Association for the Advancement of Science a grant of one hundred and fifty dollars was made to Prof. T. R. Garth, of the University of Texas, for a psychological study of Indian children in the United States Indian Schools at Chilocco, Oklahoma, and Albuquerque, New Mexico; a grant of two hundred dollars to Prof. A. L. Kroeber, of the University of California, for bibliographical and clerical assistance in connection with an ethnological investigation to determine the culture areas of aboriginal South America; and a grant of one hundred and fifty dollars to Miss Helen H. Roberts, of the American Museum of Natural History, for a study of Negro folk-music in Jamaica.

DR. S. A. BARRETT, Director of the Public Museum of the City of Milwaukee, left May 1 with a small party to conduct further investigations at the famous Aztalan mound group, near Lake Mills, Wisconsin, where he has been carrying on intensive exploration for some years past.

ON May 1, Mr. Alanson Skinner, Assistant Curator of the Department of Anthropology of the Public Museum of the City of Milwaukee left for Shawano County, Wisconsin, to examine several interesting prehistoric sites and mound groups. Later he was to visit Green Bay and the Door County Peninsula for an archaeological reconnaissance of that region. This locality includes the ancient seats of the Menominee, Winnebago, Sauk, Potawatomi, and other Indian tribes and is also interesting because it was somewhere in this region that a large body of Huron, driven from their old homes in the Ontario peninsula, settled for several years after their expatriation. This part of the work is being conducted largely through the generosity of Mr. J. P. Schumacher the veteran archaeologist of Green Bay, who was to accompany and aid Mr. Skinner.

At the ninth annual meeting of the Oklahoma Academy of Sciences held in Oklahoma City on February 11, and at the State University, Norman, on February 12, the following papers of anthropological interest were read:

"The ceremonies and rites incident to eating peyote among the Cheyenne Indians," by J. B. Thoburn.

"Where did the Indians of the Great Plains get their flint?" by Chas. N. Gould.

"The cliff-dwellers in Mesa Verde Park, Colorado," by C. W. Shannon.

On April 22, during the general meeting of the American Philosophical Society, Dr. James H. Breasted, Professor of Egyptology and Oriental History, in the University of Chicago, delivered an illustrated lecture entitled "Following the trail of our earliest ancestors."

In appointing the scientific staff of the American Museum of Natural History for the current year the board of trustees promoted Mr. N. C. Nelson, from the position of Assistant Curator of North American Archaeology to that of Associate Curator of the same subject; and Mr. H. J. Spinden from the position of Assistant Curator of Mexican and Central American Archaeology to that of Associate Curator.

THE UNIVERSITY OF ARIZONA, in coöperation with the Universidad Nacional de Mexico, conducted a Summer School in Spanish and in Mexican Archaeology in the City of Mexico from June 29th to August 10th.

DR. FRANK G. SPECK, Associate Editor of this journal, has been appointed Associate Editor for American Archaeology of the American Journal of Archaeology.

MR. WILLIAM B. CABOT, author of *In Northern Labrador*, voyaged last summer for forty days with the chief of the St. Augustine River Montagnais and a party of twenty-one persons, coming out through Paracusi River to Sandwich Bay. They performed the sweat-bath ten times in thirty-two days.

THE descendants of the Powhatan Indians on the Rappahannock River have recently formed and incorporated the Rappahannock Indian Association under Chief George L. Nelson, their object being to promote the social welfare of the community, achieve recognition, and preserve their identity.

DR. ALEŠ HRDLIČKA, Curator of Physical Anthropology in the U. S. National Museum, has been elected a member of the National Academy of Sciences.

MR. PAUL VAN NATTA, a student in the Anthropological Department of The George Washington University, has been appointed Assistant in the section of Physical Anthropology, U. S. National Museum. Another student in this department, Mr. John Baer, has been appointed Acting Curator of Archaeology in the National Museum for a period of five months, during the absence of Mr. Judd in the field.

THE AMERICAN MUSEUM OF NATURAL HISTORY has just brought out the third edition of "The Indians of Manhattan Island and Vicinity," Guide Leaflet series No. 41, by Alanson Skinner.

ALTHOUGH not of exclusively anthropological interest, mention should be made of the establishment of a Science News Service "to act as a sort of liaison officer between scientific circles and the outside world." Its headquarters have been established provisionally in the building of the National Research Council, 1701 Massachusetts Ave., Washington, D. C., and through the generosity of Mr. E. W. Scripps, of Miramar, California, it has been assured of such financial support from the start as to insure its independence.

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THE "BLOND" ESKIMOS

By DIAMOND JENNESS

INTENSE interest was aroused in the scientific world when Mr. Stefánsson announced his discovery of "blond" Eskimos in Victoria Island, and suggested that here in this remote corner of the Arctic we might find traces of the old Norse settlers who disappeared from Greenland in the course of the fifteenth century. General Greely at once made a comprehensive survey of all the literature dealing with the Eskimos, and published in the *National Geographic Magazine* an interesting compilation of the remarks of earlier writers on the varying physical types that are found among that people.¹ Several travellers had noticed individuals who markedly resembled Indians; Collinson had observed aquiline noses and a Jewish caste of countenance in Walker Bay, in Victoria Island, and Murdoch had noticed the same thing at Point Barrow, in Alaska; Petitot had seen a Scotch- or Russian-looking individual in the Mackenzie River region, while one or two other travellers elsewhere had observed Scandinavian types. These variations were noticed all the way from Greenland to Alaska, and as far south as Labrador; for to the authors quoted by General Greely we have to add, besides Murdoch to whom we have already referred, the old Jesuit missionary Père Lafitau, who says of the Labrador Eskimos, "They are tall, well built, and whiter than other savages. They allow their beards to grow, and have curly hair which they cut below the ears. Their hair is almost always black.

¹ *National Geographic Magazine*, 1912, pp. 1225-1239.

but a few have light-colored hair (Fr. blonds), and some red hair (Fr. roux), like the people of Northern Europe."¹

Mr. Stefánsson first encountered the Copper Eskimos at Cape Bexley, in Dolphin and Union Strait. Even there, he says, he had noticed a certain peculiarity in some of the natives, a certain lightness in the color of the moustache and beard that he had never observed farther west. But it was only when he crossed the strait and met the Hanerak and Puivlik groups of southwestern Victoria Island that he became fully conscious of the change. "We had been told by our guide," he says, "that we should find the Victoria Islanders of a light complexion, with fair beards, but still we were not prepared for what we saw. . . . Here (in Victoria Island) are men with abundant three-inch-long beards, a light brown in their outer parts, but darker towards the middle of the chin. The faces and proportions of the body remind of 'stocky,' sunburned, but naturally fair Scandinavians." Mr. Stefánsson finally sums up the physical characteristics of the Copper Eskimos as follows: "Of something less than a thousand persons, ten or more have blue eyes . . . some of the men eradicate their beards . . . but of those who have beards a good many have light brown ones; no one seen has light hair of the golden Scandinavian type, but some have dark-brown and rusty-red hair, the redness being usually more pronounced on the forehead than on the back of the head, and perhaps half the entire population have eyebrows ranging from a dark brown to a light brown or nearly white. A few have curly hair." Mr. Stefánsson then compares the form of head of the Copper Eskimos with that of the Eskimos in other regions, and comes to the conclusion, (1) that the Copper Eskimos show clear evidences of hybridism, and (2) that their European-like appearance is most easily explained by the theory that they have European blood in their veins, for which the old Scandinavian colony in Greenland furnishes the only explanation.²

The southern party of the Canadian Arctic Expedition, of

¹ *Moeurs des sauvages américains*, par le Père Lafitau, de la Compagnie de Jésus, Paris, 1724, vol. 1, p. 55f.

² *My Life with the Eskimo*, p. 192ff.

which I was the ethnologist, had its head-quarters at Bernard Harbor, on the mainland side of Dolphin and Union Strait, from 1914 to 1916. During two entire years we maintained an almost unbroken intercourse with the Eskimo inhabitants both of the mainland and of southern Victoria Island, from Cape Bexley at the west end of Dolphin and Union Strait, to Bathurst Inlet at the east end of Coronation Gulf; in addition we encountered a few natives, six adults and two children, from Prince Albert Sound, on the west coast of Victoria Island. Physical measurements were taken of 82 men and 42 women, and at the same time observations were made concerning their eyes and hair and other external features. In summarizing the results, in so far as they bear on the question of the "blondness" of these Eskimos and the possible infusion of European blood, I have not considered it necessary to separate the Victoria Islanders from the natives of the mainland south of them (although it might easily have been done), because all the tribes in this region constantly intermarry, and in any one group representatives may be found of half a dozen different tribes, both from the mainland and from Victoria Island.

Of the 82 males that were measured 70 had eyes that ranged in color from light brown to dark brown. In the remaining 14 the predominating color was brown, but it was tinged with grey (in one case a greenish-grey) or a milky blue. Closer examination showed that this second color was usually present only on the fringe of the iris, often only on the lower or the upper edge, and that it extended occasionally into the sclerotic; very rarely did it cover the whole of the iris. Of the women only two out of the 42 showed any bluish or greyish tinge, the remainder all having brown eyes.¹

It is a significant fact that in every one of the 16 cases of light-colored eyes the native was either middle-aged or well advanced in years; the youngest could hardly have been less than 35 years of age, and the majority were probably from 40 to 50. Apparently,

¹ "The color of the iris among the total number of East Greenlanders examined (136) must be designated as brown with certain nuances; blackish-brown, dark-brown, greyish-brown—with only a single exception, a twenty-year old girl from Umanak, who had blue eyes." (*Meddelelser om Grønland*, vol. XXXIX, p. 177.)

therefore, it is very rare in children. Further, the light coloration was sometimes more marked in one eye than in the other. It seems reasonable to suppose, therefore, that it is only a secondary characteristic, indicating probably a diseased condition. Dr. D. S. Neumann, the health officer of the Bureau of Education in northern Alaska, thought that it might be due to repeated attacks of snow-blindness, when it would naturally be more apparent in the older people, and among the men more than among the women. He kindly examined with me a number of Eskimos from the King and the Diomed Islands, and from Cape Prince of Wales, who happened to be in Nome at the time of my visit. The results were very instructive. Out of 67 natives, adults and children, only two were found to be absolutely free from any eye disease. Ten out of 13 King Islanders showed *arcus senilis* to a greater or less extent, and one rupture of the eyeball. Of 14 Diomed Islands 10 had *arcus senilis*, 3 the same disease combined with *pterygium*, and 1 rupture of the eyeball; while out of 40 Cape Prince of Wales natives 21 had *arcus senilis*, 14 both *arcus senilis* and *pterygium*, 3 *keratitis* and *arcus senilis*, and two granulated lids. It required careful examination in many instances to detect the signs of disease, but wherever *arcus senilis* was very pronounced there was the same bluish-grey coloration of the eye as I had noticed among the Copper Eskimos. It may be that future researches will show other causes for the variations in eye color; nevertheless the fact remains, that as far as my own observations enabled me to judge, the eyes of the Copper Eskimos differed in no respect from those of the natives in northern Alaska.

Although no correlation can be expected between the color of the eye and its shape, yet it is interesting to notice that there was the same variation in shape among the 16 light-eyed Copper Eskimos as among the other natives of their race. Two of the 14 men had perfectly "straight" eyes, while the remaining 12 showed the "Mongolian" fold to a greater or less extent. In one of the women the fold was very strongly marked. Every variety of shape is found indeed among all tribes of Eskimos, from full "Mongolian" to full "European," though the "half-Mongolian," i.e., the slight fold, is

perhaps the commonest type. We made no attempt to measure little children among the Copper Eskimos, but all whom I saw seemed to have very dark brown eyes with the "Mongolian" curve more pronounced than in the case of the adults; Parry, it may be mentioned, noticed the same difference between children and adults among the Iglulik Eskimos of Baffin Land.¹

The next point to be considered is the color and shape of the hair. It is important to distinguish first of all between the hair of the head, the eyebrows, the moustache, and the beard. Among several races, including Europeans, it is usual for the moustache and beard to be a little lighter in color than the hair of the head. In the case of the 124 Copper Eskimos whom I measured, the hair of the head was uniformly some shade of black or brownish-black. In a dull light, except on the most careful examination, it would have passed as black in almost every case; but against a strong light a dark brown tinge was usually noticeable, especially at the ends of the hair. Its shape was seldom absolutely straight and lank; there were usually slight ripples in it, especially toward the ends. It might almost have been called "wavy" hair in one or two instances, if the term "wavy" had not been technically applied to the much finer and more billowy hair of Europeans. I noticed that in many cases the hair seemed to begin a little farther back on the forehead than is usual, giving an unreal appearance of height to the forehead; but there was no change of color in this part of the head that I could perceive. As for the glossiness remarked by earlier writers as so typical of Eskimo hair, it seemed to vary considerably from individual to individual.²

The eyebrows were in most cases very sparse so that it was difficult to detect their real color; but in no one of the 124 cases that we examined were they lighter than a dark brown, save where they were becoming grey with old age. Neither the moustache nor the beard was ever thick or abundant, not did they attain to any great length. I can not help thinking that Back exaggerated somewhat when he said of the Eskimos on the Great Fish River that

¹ Parry, *Voyages*, vol. IV, p. 78, 1835.

² In East Greenland the color of the hair is black or dark-brown (*Meddel. om Grøn.*, vol. XXXIX, p. 177).

"they could not have nurtured a more luxurious growth of beard, or cultivated more flowing moustaches." Certainly this was never the case among the Copper Eskimos we encountered, with whom neither the moustache nor the beard ever developed to any extent until they approached middle age; indeed the presence of a beard was considered by them as a certain sign of old age, or at least of advanced years. It is generally concentrated on the chin, with only a few sparse hairs scattered over the jowls; three inches would probably be the maximum length. In color it is usually a dark brownish-black, but not infrequently it is a rich brown, especially around the lips. Even in such cases, however, the hair on the chin is almost always a brownish-black, except when it is becoming grey with old age. There is some reason, therefore, to suspect that any unusually light color around the lips is due to some bleaching agent, perhaps the hot blood soup that the natives are always drinking; for in no case that we noticed was the hair of the head other than black, or a dark brownish-black.

The color of the skin ranged from a fairness almost as great as that of the average Englishman, to the olive color of the Italian. Murdoch found the same differences at Point Barrow, in northern Alaska. He says, "There appears to be much natural variation in the complexion, some women being nearly as fair as Europeans, while other individuals seem to have naturally a copper color."¹ I compared my upper arm with the upper arms of a number of Copper Eskimos, and in some cases there was hardly any perceptible difference. Those portions of the skin, however, that are exposed to the weather, the face and the hands, tan to a darker color than the corresponding portions in Europeans, and this natural dark hue is increased in summer by an incrustation of dirt, for the natives practically never wash. Hence the traveller who judged of the color of the Eskimos by their complexion in winter would come to the conclusion that they are a fair-skinned people, while another who saw them only in the summer would believe them to be as dark as Spaniards or even darker. There

¹ *Ann. Rep. B. A. E.*, vol. 9, p. 36; cf. Simpson, *Arctic Papers for the Expedition of 1875*, p. 238, London, 1875.

is one point, however, that it is important to notice, and that is that there appears to be no connection whatever between the fairer skin color of some of the natives and blue or grey eyes.

Mr. Stefánsson gave some figures showing the proportion between the breadth of the face and the breadth of the head among the Copper Eskimos, and compared them with some figures that the veteran anthropologist Dr. Boas had published from other Eskimos.¹ It is unfortunate that these particular measurements should have been chosen for comparison, for they are not the standard ones that are usually made by anthropologists in questions relating to race. Moreover most of the figures that are quoted from Dr. Boas are derived from skull measurements, and so are not strictly comparable with measurements derived from living natives; then again they are derived from a very limited number of skulls, and so can not be relied upon as establishing definite types. Three Mackenzie River Eskimo men whom I measured gave results that were practically identical with the measurements of the 82 Copper Eskimo men, which is totally at variance with Mr. Stefánsson's conclusions.² But until more measurements of this kind are published from other sources no real comparisons can be made on this basis between the different tribes of Eskimos, and certainly no conclusions can be drawn from them concerning the purity or otherwise of any particular branch of that race.

The best indications in regard to race, as far as physical measurements are concerned, are derived, according to the opinions of the leading anthropologists, from the stature, and the proportions of the length of the head to its breadth, i.e., the cephalic index. Now in selecting other Eskimo groups for comparison with the Copper Eskimos we ought to choose those which are admittedly the purest, and at the same time those from whom we have a considerable amount of reliable anthropometric data. There is really only one group which answers to these two requirements, the Ammassalik Eskimos of East Greenland, who are regarded by Søren

¹ *Bulletin of the American Museum of Natural History*, vol. XIV, 1901, p. 60.

² The three Mackenzie River men gave an index of 95.6, and the 82 Copper Eskimos 96. Three Alaskan natives from Point Hope gave an index of 99.1.

Hansen, our chief authority, as "a pure and unmixed Eskimo tribe without any ostensible traces of foreign elements."¹ If, then, we compare the measurements obtained from the Copper Eskimos with the corresponding measurements obtained from East Greenland, we ought to be able to obtain some light on the purity or otherwise of the former people.

Taking the stature first, Hansen found that in East Greenland, the average height of 53 men was 1629 mm. (maximum 1760 mm. minimum 1486 mm.) and of 38 women 1538 mm. (maximum 1650 mm., minimum 1430 mm.). My figures for 82 Copper Eskimo men gave an average of 1648 mm. (max. 1743 mm., min. 1495 mm.) and for 42 women 1564 mm. (max. 1660 mm., min. 1471 mm.). It would appear, therefore, that on the average the stature of the Copper Eskimos, both males and females, is very slightly greater than that of the East Greenland natives. The difference is so little, however, that, if significant at all, it could very easily be accounted for by the different conditions of life in the two regions. As far as the stature is concerned, therefore, we have no evidence of Scandinavian admixture among the Copper Eskimos. Indeed, the evidence we have might almost be said to point against it, for in southwestern Greenland, where there has been admittedly a considerable admixture of Danish blood, the average height of 21 men (Hansen's figures again) was only 1576 mm. (max. 1684 mm., min. 1520 mm.) and of 24 females only 1518 mm. (max. 1602 mm., min. 1452 mm.); that is to say, in southwestern Greenland, where there is Scandinavian infusion, the stature is slightly below that of the pure-blood East Greenlanders, whereas among the Copper Eskimos it is slightly above.²

Let us consider next the cephalic indices of the Copper Eskimos (the breadth of the head as compared with its length), and compare them with Hansen's figures from East Greenland. Here we find a very marked resemblance. The average cephalic index of the 82 Copper Eskimo men was 77.6, and of the 42 women 76.7, whereas in East Greenland Holm's figures, as given by Hansen, are 76.9 for

¹ *Meddelelser om Grønland*, vol. xxxix, p. 179.

² 13 Eskimo men of Point Hope, in northern Alaska, gave an average stature of 1673 mm.

53 men and 75.6 for 38 women. The differences in the figures are so slight as to be practically negligible; they might, indeed, almost disappear if we had a greater number of cases to go by. Certainly in themselves they lend no support to any theory of race intermixture for the Copper Eskimos which would not be equally true of the natives of East Greenland.¹

It is quite possible, however, that although no single feature taken by itself should give definite evidence of an intermixture of races, yet the general appearance of the natives, more particularly their features, might in many cases afford some slight presumption of it. After all we should hardly expect on a priori grounds that the Eskimos would be an absolutely pure race, meaning by pure that from those early times when first they separated from the rest of the human family and developed peculiar characteristics of their own they have preserved themselves rigidly free from all intermixture with other races. There is perhaps not a single race on the face of the earth which would answer to this definition. Now a fusion of races inevitably brings about modifications in the physical types, as one descendant harks back to one line of ancestors and another to another. Within definite limits, therefore, a certain amount of heterogeneity, over and above what might be due to the varying conditions of life, is to be expected from every race, although for thousands of years it may have kept itself aloof from every other. It is interesting to remember in this connection that Petitot, the French missionary in the Mackenzie delta, speaks of four Eskimos with whom he travelled as presenting so many distinct types; one of them looked like a Scotchman or a Russian. Rasmussen, again, mentions a native of Cape York, in northern Greenland, who "did not resemble in the least the type that is usually regarded as Eskimo. His face was narrow and clear-cut, his nose slightly aquiline . . . he was more like a gypsy than an Eskimo." Different explorers will naturally find different analogies according to their earlier experiences. Thus in the very region where Mr. Stefánsson was reminded of "stocky, sunburned, but naturally fair Scandinavians," Collinson had particularly remarked on the Jewish caste of countenance.

¹ The 13 Point Hope Eskimo men gave an average cephalic index of 78.2.

I myself seemed to distinguish among the Copper Eskimos three distinct types, which, while they must not be taken to represent so many distinct races, would serve to warn us that we should not expect to find a wholly homogeneous people. There was first the type that all writers have so consistently depicted as peculiarly Eskimo, the rather fair-skinned native with lank black hair, somewhat short and squat, but with a round pleasant face, twinkling dark eyes that appear a little aslant as among Mongols, a rather flat nose with a low bridge, and high cheek-bones. The second type was taller, with a longer face, a chin that was often pointed, eyes that occasionally appeared a little aslant, but more often were quite straight like our own, and a nose rather big and aquiline. A common type intermediate between these two gives a square, rather block-shaped face.

The third type was very different from either of the preceding two, at least in its extreme forms. One might almost be tempted to call it a Melanesian type, so short is the face, so thick the lips, and so broad and flat the nose. In all the features there is a coarseness and brutality that is altogether foreign to the average Eskimo. Dress such a man in European clothes and the most learned ethnologist might be puzzled to determine his race.

Whether such a division into types has any independent value, and whether there are similar types among the Eskimos elsewhere, we have not the data at present to decide. There is a certain amount of evidence to prove that many of the inland natives of northern Alaska are taller and more slender, and have longer and narrower faces, than the Eskimos farther east, and admixture with Indian blood is the usual reason assigned for it. It is possible that the same admixture has taken place, to a more limited extent, among the Copper Eskimos also; but apart from this, there seems not the slightest indication of any racial intermixture that we can trace, and certainly not the faintest sign of any European elements.

To sum up, therefore, it seems clear that neither the color of the eyes, nor the color and shape of the hair, nor again the complexion of the Copper Eskimos, differentiates them in any way

from the other branches of their race, or lends any support to the theory of Scandinavian or even European admixture. If such an admixture had occurred we should expect to find its signs, not only in these more external features, but also in the stature and in the shape of the head. Mr. Stefánsson's own comparison—breadth of face with breadth of head—is inconclusive, firstly, because he has insufficient data of a similar nature from other Eskimo sources with which to compare his data from the Copper Eskimos, and, secondly, because it is not recognized by the best authorities as a consideration of major importance in determining questions of race. The principal feature that is employed for this purpose, the cephalic index, tends to show that the Copper Eskimos are as pure as the purest known branch of the Eskimo race of whom we have definite and detailed knowledge. Until, therefore, we are presented with more tangible and significant evidence, the theory of Scandinavian or even European infusion among the Copper Eskimos must be regarded as unproved, and indeed groundless.

GEOLOGICAL SURVEY,
OTTAWA, CANADA

ABORIGINAL SITES IN AND NEAR "TEAOGA,"
NOW ATHENS, PENNSYLVANIA

BY LOUISE WELLES MURRAY

PART II

IN the first part of this paper we treated of the aboriginal remains from Athens, Pa., southward along the lower course of the Chemung River and on the west side of the Susquehanna to the neighborhood of Ulster (see map of the region, fig. 48, here reproduced from Part I). Crossing the long bridge over the Susquehanna at the latter place to New Sheshequin, we turn south to visit the Hornbrook site, explored and described by Andrew Delpeuch. But while on the bridge, look south toward Layman's Island immediately below, on which, as on all the river islands, is considerable evidence of Algonkian occupation. On the north end Paul Scott recently found a very old fireplace evidencing long use, and the Delpeuch collection has pot lids, celts, war clubs, and the fragment of a small Algonkian pot shown at the middle left of figure 49. The village site (No. 12) on Hornbrook Creek marks the southern limit of our survey. It is close to a fine spring at the crossing of the old Indian trail, and absolutely pre-Iroquoian. In addition to the artifacts, shown in the lower half of figure 49, which include steatite and ceremonial objects, there has been found every sort of implement for agricultural purposes and home use. An unusual one at the upper right of the illustration has been named a "mushroom muller." The artifacts to the right of this are from the Coveleski collection, the small celt with the perforation, also the argillite spear and the trade bead which were found in the same grave. In the center of the plate is a concretion often called a "clay dog," and mistaken for an Indian effigy. The beveled celt is from the Macafee site hereafter to be noted, the black spear-head from the Mather site in Ulster, the rough celt and the grooved

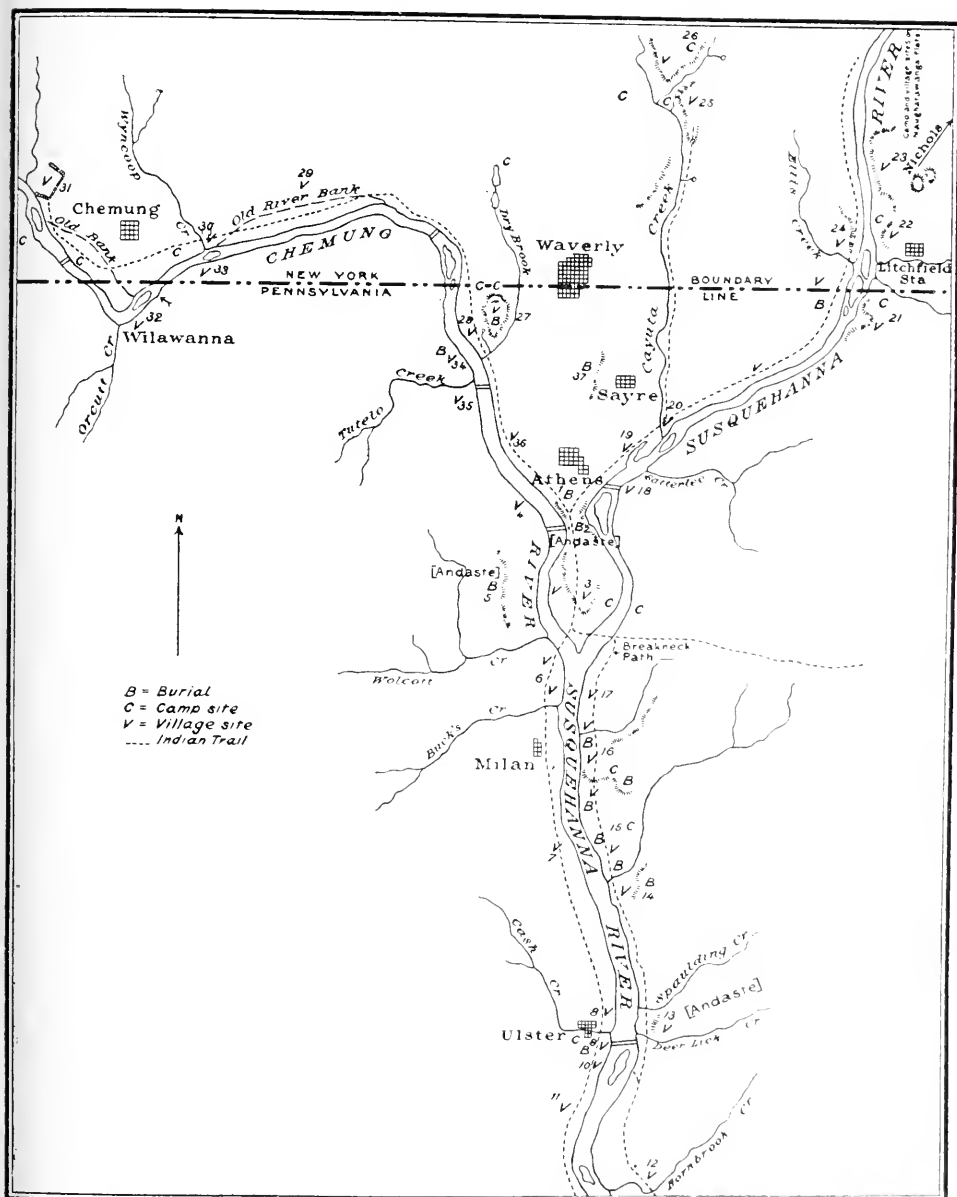


FIG. 48.—Sketch map showing aboriginal sites in the region of "Teaoga," now Athens, Pa.

battle axe from Layman's Island, all belonging to the Delpauch collection.

Returning toward the bridge, from the Gore flats came a large,

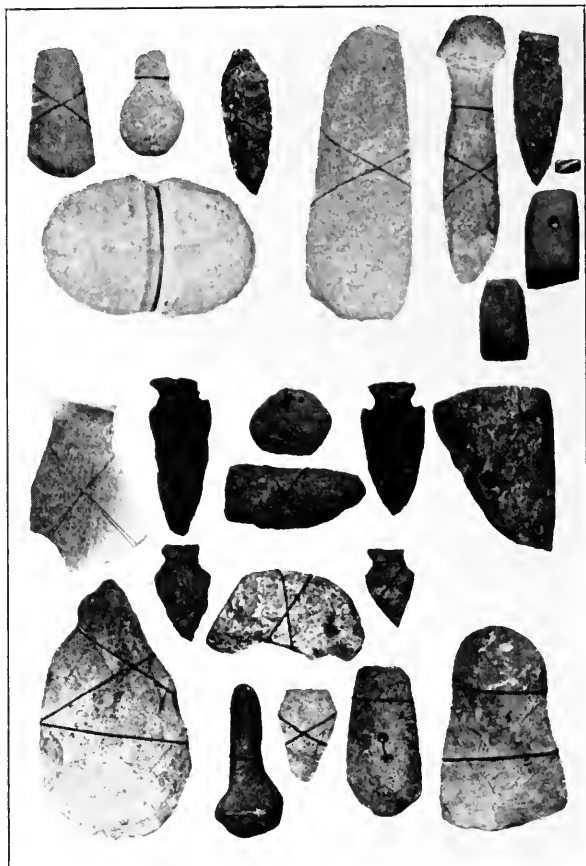


FIG. 49.—Algonkian artifacts from Hornbrook and Sheshequin sites.

highly polished steatite tube, five inches in length, suggesting Ohio "mound builders" (D in fig. 44, of Part I), also the straight tube-pipe (B in the same plate). These tubes are both unusual types.

There has been found by various collectors evidence of continued occupation for about two miles north on the broad river flats (Sites

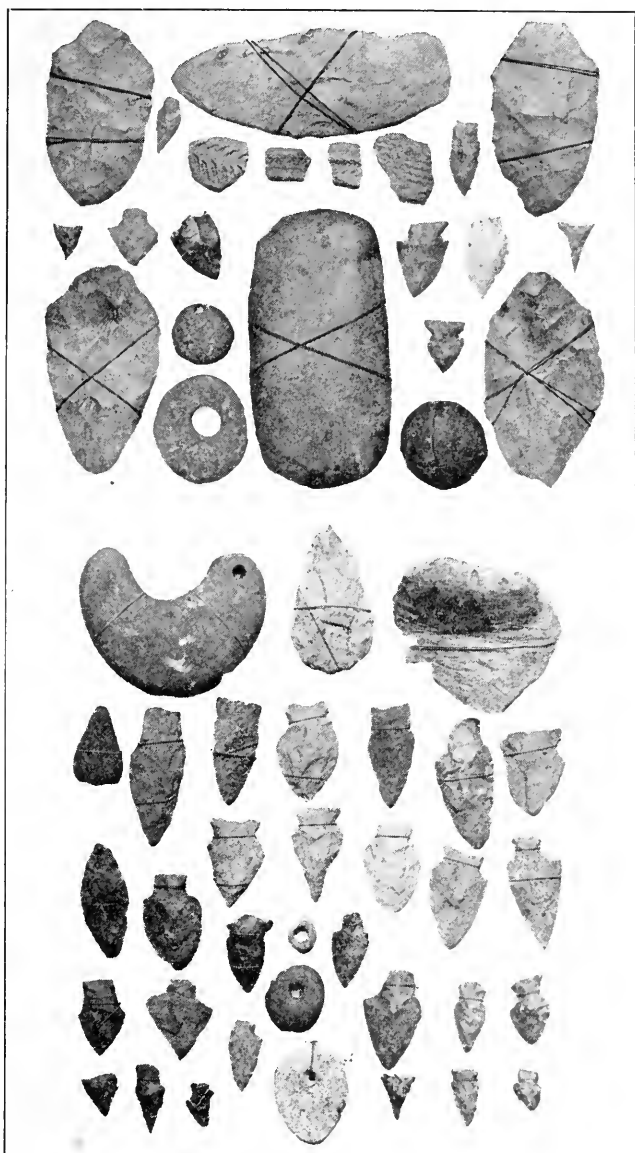


FIG. 50.—Objects from archaic Algonkian site at Sheshequin, including unusual amulets.

14, 15, and 16). Just opposite Ulster Mr. Moorehead found traces of Andaste and late Algonkian occupation on the same site. Typical Andaste potsherds were found in the shell pit; and no doubt here was long ago found the wonderful Andaste pot in the private collection of John W. Coddington of Towanda, reproduced in Wren's *Appalachian Pottery*. Countless artifacts have been gathered here for years, only to be scattered with no recorded data. The large Delpeuch collection showing many cultures is not arranged according to culture. There are several early collections in Tioga Point Museum recorded only as "from Sheshequin," gathered by Snyder, Gore, and Jenny, long since dead, and consisting almost entirely of Algonkian artifacts. Figure 50 shows one of these collections, known only as from "Sheshequin camp," the points and knives being nearly all of rhyolite or common stone. The ceremonial objects are unusual both in material and shape, especially the lower one which glistens with mica. At the top of the same figure is part of the Litzelman collection from their own garden (Site 13) on a ridge or sunny knoll overlooking the river. The knife or scraper suggests the semilunar knife of the far north or the as yet undetermined Algonkian type, and is very similar to one from Hornbrook, as is also the round pendant, both of which when found, the collectors say, showed inlaid decoration of bits of mother of pearl. The double-grooved ball at the lower right may have been a sinew dresser.

Returning to the river flats, the artifacts are from John Covel-eski's collection in the Museum, which includes many more artifacts of varied use and varied cultures. Figure 51 shows a part of a large cache of slate spear heads disclosed and broken by an ice flood in the spring of 1920, the material from a ledge only a few rods away. The same plate shows steatite and some of the crudest artifacts found in our whole survey; yet there is some indication in the spear points of trade material, and the greatest variety in shape, with a small proportion of late Iroquois triangular points. Much of the older culture came from a refuse pit on the Cranmer farm some distance north of the bridge. The burial sites, in every instance close to the villages, were all disclosed by floods and no notes taken.

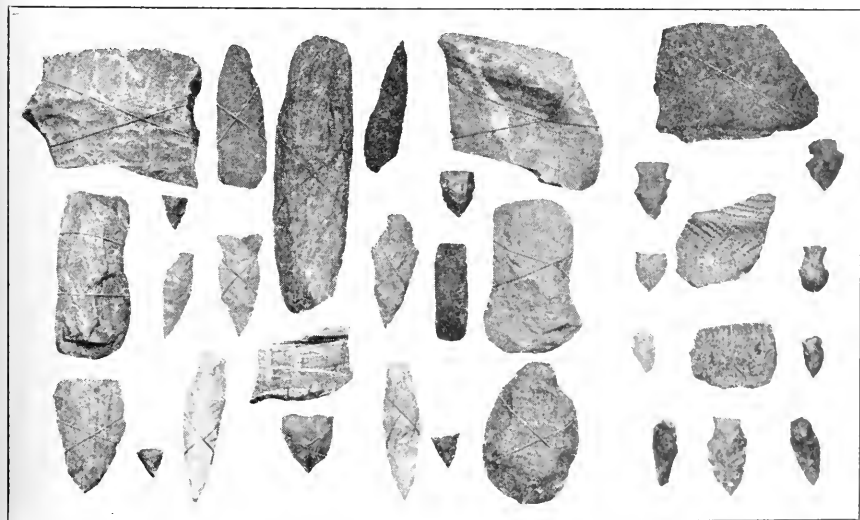
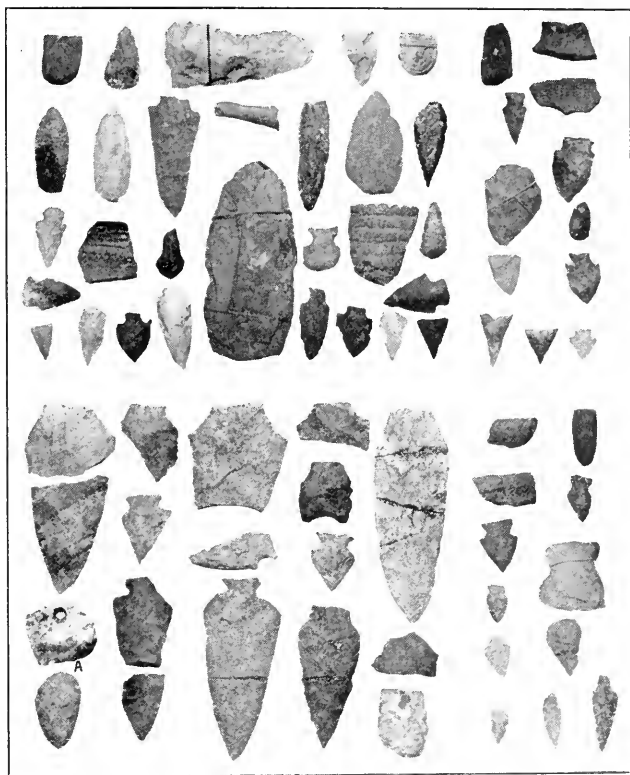


FIG. 51.—Crudest implements and oldest local material found on Sheshequin flats.
Coveleski Collection.

The Coveleski collection has an unusual number of rubbing stones and countless broken celts; and there are many indications that these flats were in early times a great workshop and that occupation was not transient. At the extreme upper end (Site 17), on the Macafee flats, are repeated evidences of a village of long continuance and of busy workmen. Flint chips abound; caches of arrow points and many drills have been found. Tradition tells of a thirty-foot circle here of flat stones, laid regularly with the stones pointing toward the center, supposed to indicate "an ossuary, or ceremonial outfit." Investigation has been in vain, and even the Susquehanna Archeological Expedition found here no traces of burial. Very recent investigation, with the writer present, revealed from the river bank, here very high, four fireplaces in a row, four to six feet apart, and two feet below the surface; but only a few broken arrow points were found. The writer has long believed this to be an Andaste as well as an Algonkian site.

All the way along the river flats the innumerable broken celts and pestles as well as steatite fragments are noticeable. One mica ornament and many fragments of butterfly ceremonials are in the Coveleski collection in the Museum, which is notable for the use of local material, the scarcity of Iroquois types, and possibly pre-Algonkian implements. "Why are so many banner or butterfly stones found broken?" asks the collector.

Here the old trail, named by the first white man "the break-neck path," goes over a steep mountain whose base is the river's edge, and for a few miles there is no possible place for a village or camp. Once over, on the Baldwin farm just across from old Teaoga have been found many small knives or celts of black slate, showing unusual workmanship. As the river flats widen, from the Harrington farm virtually to the Sayre bridge, is a continuous Algonkian site, again long inhabited and with little evidence of later occupation. The arrow maker plied his trade on the present Fair Grounds, also close to the highway at the end of the Sayre bridge; and his arrows were all hafted or barbed. A burial site just south of the Athens bridge is almost washed away,¹ but many

¹ Just opposite this on the west side of the river at the back of the Harris and Ahbe lots is sufficient evidence of an Iroquois burial site (shown in Lewis Rinebold's collection) to justify further investigation.

Algonkian potsherds have been found, and some pipe fragments (see Walline collection in Museum), some of which are reproduced (top, fig. 52). Satterlee Creek shows both village and camp sites for some distance from the mouth (Site 18), see Webb collection shown in figure 52, archaic Algonkian. Along the bank above

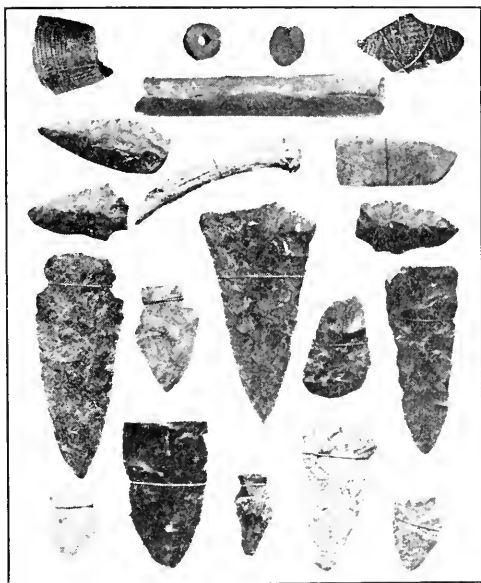


FIG. 52.—Objects from an archaic Algonkian site; near the top a tubular copper bead.

have recently been found steatite fragments, banner stones, rough celts, and an unusual type of spear, suggesting prehistoric occupation, notable for the variety of materials.

The Rinebold collection shows, from the river edge of the Harrington farm, a large mortar of unusual depth, and a tube bead of copper (shown in fig. 52) similar to those found by Mr. Skinner at Upper Queen Esther's Flats and made, evidently, by beating the metal into a thin plate and then rolling. These are possibly Algonkian artifacts like those from New York State, noted by Dr. Beauchamp.

There is an old ferry near the mouth of Satterlee Creek. Crossing and turning north a few rods we may visit the Susquehanna

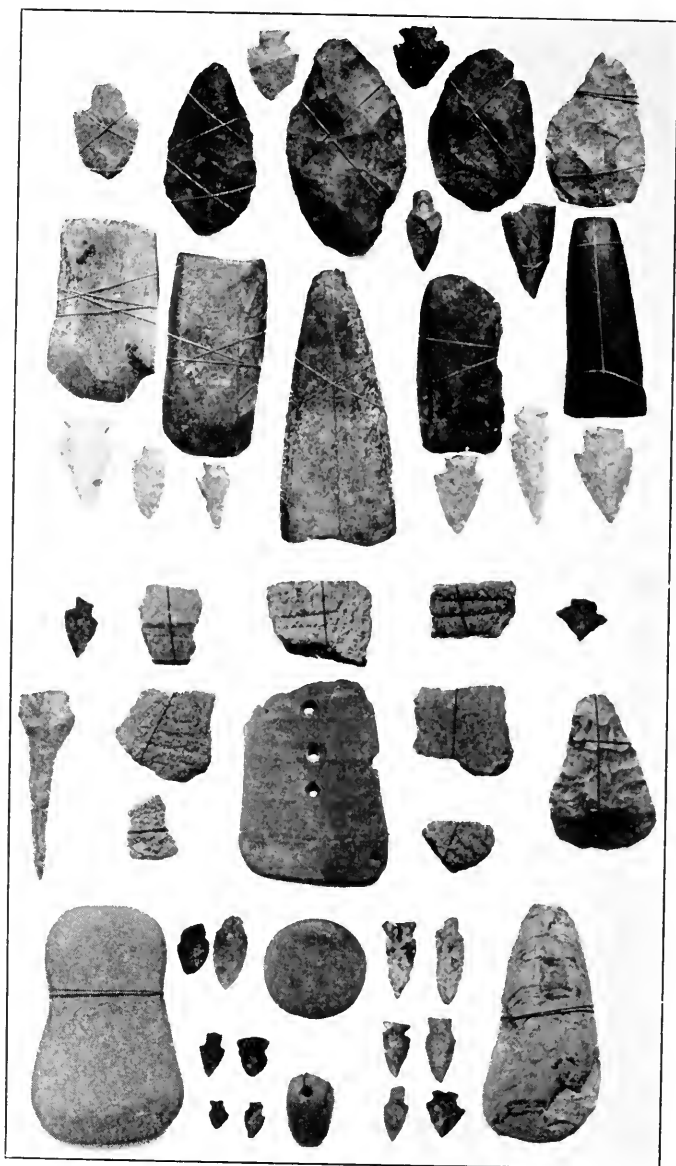


FIG. 53.—Some unusual Algonkian artifacts from Site 10; one-third original size.
Tozer and Johnson Collections.

Cove site (No. 19), from which have been gathered desultory collections for over one hundred years, long ago carried out of the locality in ignorance of the fact that "the scattering of a collection from one site is the destruction of just so much knowledge." While practically no observations have been taken, there are in the Museum good collections and many single objects, all pre-Iroquoian. Algonkian potsherds, rectangular celts, the gouge, knives, hafted and barbed points, rough stone celts, and a few unusual ceremonials, especially the small pendant, are seen in figure 53. This may have been a camp site but shows long usage, and many large implements were removed years ago.

We are on the Owego trail and, following it for about a mile, we reach a village site of much interest at the mouth of Cayuta Creek, in one of those sharp, easily defensible angles that the red man loved (Site 20). As far as known, the collectors on this site (Delaney brothers, Lang, and Wolcott) have been few but faithful, and their finds are in the Museum or have been studied by the writer. The rough grooved axe, sinew dresser, and triple-grooved plummet of Rhode Island type, celts of many shapes and materials, odd knives and spears, some problematical artifacts, many drills, hafted and barbed points, an effigy pipe fragment, one-hole ceremonial objects, and a small proportion of triangular points, also the native copper earring, evidently of Indian workmanship, are well shown in the accompanying figures (54 and 55). There are some long points like most of those found on West Branch, more hafted than barbed small points, and a number with the bifurcated base occasionally found in Pennsylvania, as also in Ohio and the adjacent states. No argillite or rhyolite is found here, but most of the barbed arrows are of rough stone, of local material. Possibly from a later occupation, there are many jasper points—red, yellow, and cream—and quantities of jasper chips found nowhere else, indicating a finishing shop for jasper brought from the quarries on the lower Susquehanna. There is one exquisite bird point of transparent flint that the collector said must have been made by some youth as a charm for his sweetheart. The large piece of steatite with serrated edge and many perforations seems problematical. Many rough tomahawks

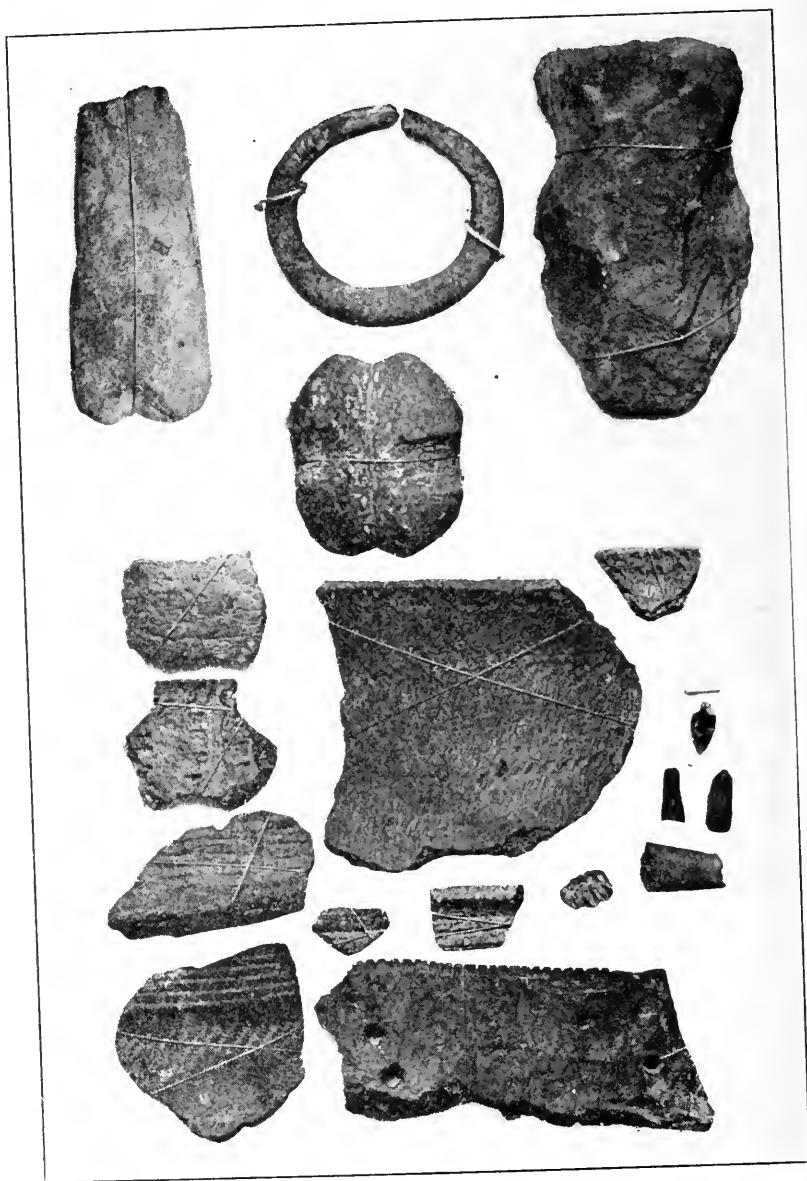


FIG. 54.—Unusual Algonkian artifacts from the mouth of Cayuta Creek; at the top a copper earring, probably of native manufacture.

or hoes, mullers, hammers, and unusual, deep lapstones betoken an agricultural and industrial life. The large pottery fragment is almost identical in shape and decoration with one from Queen Esther's Flats, four miles away, except that inside and out it is



FIG. 55.—Algonkian artifacts from the mouth of Cayuta Creek; one-third actual size.
From the Wolcott, Delaney, and Lang Collections.

covered with yellow clay, the middle layer being black; it shows no sign of use. The other sherds throughout are of yellow-colored clay mixed with an unusual amount of mica, thus forming a distinct group. The Algonkian rim decorations are in great variety, some extending inside more than an inch.

"This trail was dotted with villages," and only a mile farther up is the State Line site that shows an older culture and a well-defined

burial site, perhaps established by the inhabitants at the mouth of the creek. From the Wolcott collection, the arrows, all barbed, are of rhyolite, common slate, and stone. There are also a number

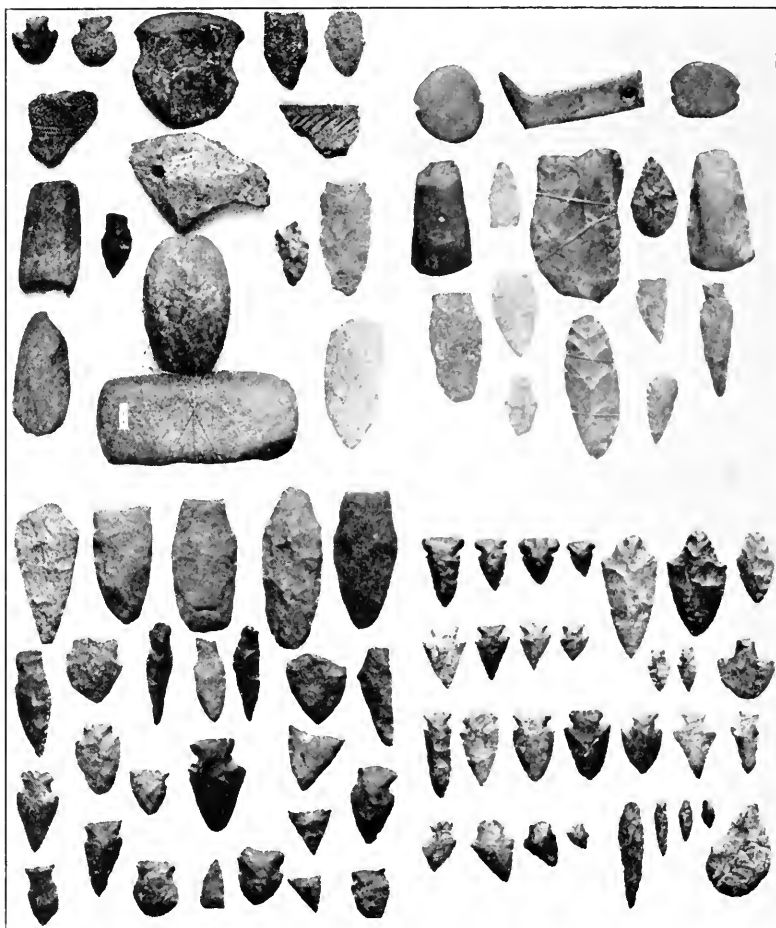


FIG. 56.—Archaic Algonkian artifacts, including blades of argillite and rhyolite, from Site 21. Park and Cowles Collection.

made of jasper (lower left, fig. 55). Just above, from the same collection, are archaic Algonkian points, small drills, and a one-holed pendant from the site at the mouth of the creek.

On the high ground is a burial place that may belong to a site on the other side of the river. Let us ferry over to Site 21. Here was a village of considerable extent between the highway and river on the Park farm. Two typical collections made here are in the Museum, the larger one gathered by Alvarado Park during a period of forty years' residence on the site. Many small artifacts were gathered after a flood which removed a foot or more of previously deposited silt as far back as the first terrace, at which time the neighbors joined in the "flint harvest" as it was called. Much is scattered and no notes were ever made by these early collectors, but we have the benefit of the more recent work of Ellsworth Cowles. Beginning at the river bank and working east to the crest of the hill, "one may find evidence of all cultural periods, belonging to this region, and little or no evidence of contact with traders or Europeans." The village site proper does not appear to extend east of the highway, and present-day collectors seem to find most near the crest of the terrace one hundred feet from the river. There are many steatite fragments, as a rule found near or on the hill, also many stone implements, pecked and chipped, and every type of celt. Hoes, long pestles (one with a supposed bird effigy at the end), and large mortars show agricultural habits. The soil here is deep and light, well suited to aboriginal use. Figure 56 shows the leaf-shaped and hafted blades and spears, *notched* sinker stones, a broken bird stone showing evidence of use as a whetstone, crude blades of argillite, long one-sided spears of early Algonkian type; also one-sided arrows, drills, and other articles of unusual shapes. These figures deserve close study. Figure 57 shows what its collector calls "a masterpiece of flint chipping." Two have been found

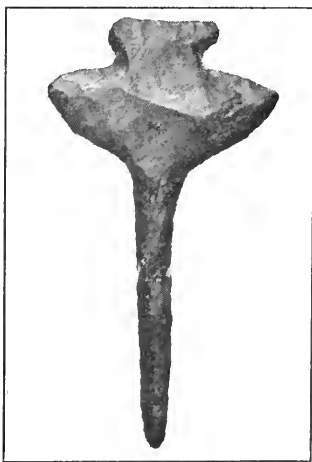


FIG. 57.—Winged drill(?); reduced one-half. Cowles Collection.

here. It is problematical because each skilled archaeologist who has seen it (and they are many), has attributed to it a different use. Is it a winged or hafted drill, a woman's hairpin, or a blanket fastener? The collector will be glad to label it correctly. Most of the pottery shown in figure 58 is Algonkian, although A is a true Andaste form with the deep collar, and B shows Iroquois influence.

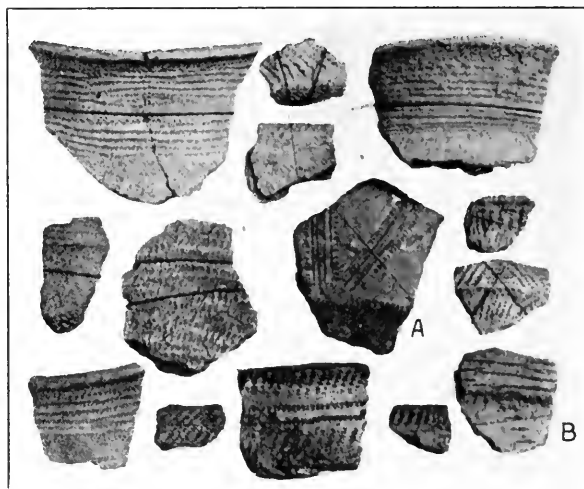


FIG. 58.—Potsberds from the Park Collection; A and B Andaste, the rest Algonkian.

The smallest sherds are reversed to show the interior rim decoration. This was all washed to the surface. No burials having been found near by, conjecture placed the cemetery across the river, unless it was washed away as has been the case with some sites farther up the stream.

Another distinct village site (No. 22) is near Litchfield station, a half-mile farther up the river, which makes us wonder if the aboriginal inhabitants did not use every foot of the river bank on both sides. Here again the Algonkian culture is plainly evident (see fig. 56, lower left corner), materials mostly local or of great age. The beveled celt is particularly notable, though occasionally found in the region surveyed. The lower implement the collector, Ellsworth Cowles, calls "a hand pestle, square in section with pits

for finger grips on four sides." The large scraper of common field stone which may have been hafted, the small one of rhyolite, the argillite blades, one with a curious projection near the point, the steatite, and the potsherds speak for themselves. On Site 23 Cowles found a refuse pit, uncovered during a flood though on the highest terrace, with great masses of river shells, animal bones split for marrow, firestones, steatite fragments with serrated edge like that at the mouth of Cayuta Creek, and considerable pottery, notably a small pot filled with bones and packed inside another. In spite of careful handling both pots fell to pieces. Close by was a very long effigy pestle, similar to one found on the Park site. Hammers of conglomerate, sinker stones, both chipped and cut, arrow points of different cultures, some extremely crude and others showing the expert art of the Iroquois, prove this to be a reoccupied site.¹ This was examined by Warren K. Moorehead.

At the extreme right of the map, marked "camp and village sites," is a rather extensive site, in historic times called Maughatawanga, or more precisely Mauch-at-wau-gum (red bank). While in use in the days of the early explorers, it evidently knew very early occupation on both sides of the State Line, and will bear further investigation. There are two river terraces here, the artifacts being found mostly on the lower. The majority are Algonkian with little evidence of contact or trade influence, excepting one fine obsidian spear point found by Mr. Lang. Note the crude workmanship of the grooved axes shown (fig. 59). Some lapstones are of an unusual type with a deep round hole in the center. There are many specimens from this site in the Lang and Cowles collections, a few ornaments and some ceremonial objects, although not

¹ Some adjacent sites just beyond the limit of our proposed survey were explored twenty years or more ago by Mr. Percy L. Lang of Waverly, one of our pioneer field workers, who has the largest private collection, made by himself and covering a territory somewhat more extensive than that shown in the map, but along the same lines. Of the region he explored Mr. Lang says, "This territory should be studied and investigated systematically and intensively that all things pertaining to the Indian may be discovered and preserved." The discovery and investigation of many sites was begun by M. P. Murray and G. T. Ercanbrack, with whom were later associated not only Mr. Lang, but Dr. C. H. Ott, whose collection has long been a part of the Tioga Point Museum collection; and I. P. Shepard whose geological knowledge of the valley has been of great assistance.

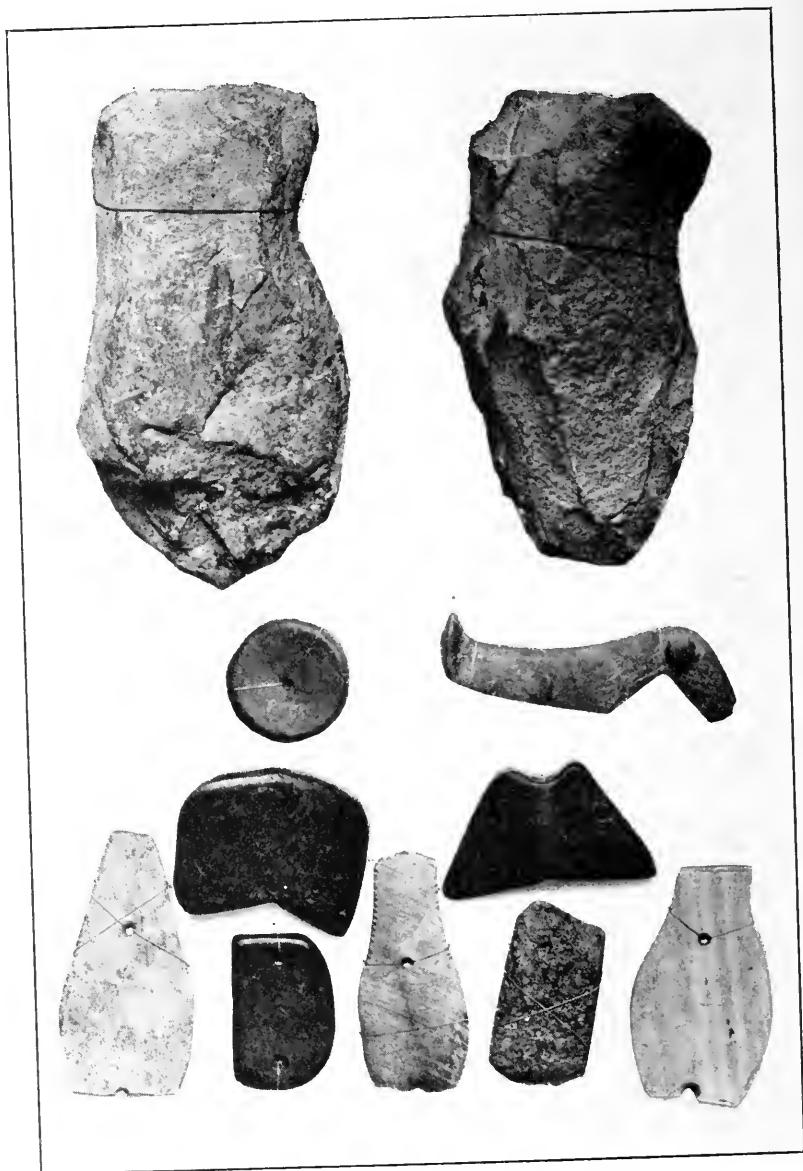


FIG. 59.—Ceremonials and Algonkian grooved axes from Maughatawanga and Nichols. Lang Collection.

in the profusion evident on the site farther east at Nichols, now practically washed away. We reproduce a Nichols group (fig. 59, lower half) from the Lang collection. This village was on high ground on the east side of the mouth of Wappasena Creek, with a burial site on the flats; indeed, as Mr. Lang says, "There is not a

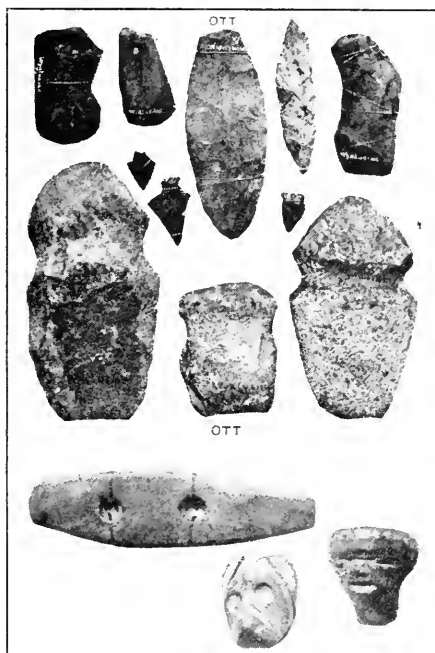


FIG. 60.—Objects from Wyalusing: Algonkian artifacts, a stone pipe ornamented with a dog face, Seneca pottery pipe.

locality along these rivers where a contributing stream appears that does not bear evidence of Indian occupation, from which many valuable and interesting specimens have been taken."

[An Indian trail running along Wappasena Creek passed to the head waters of Wyalusing Creek at the mouth of which, in the lower part of Bradford County, were Andaste and archaic Algonkian villages. The few specimens from these sites are of unusual interest. Of the stone pipe we know nothing except that it has been pronounced Algonkian, also ceremonial. The earthenware pipe has

its mate in the Dewey collection, made, Mr. Parker says, by a Seneca Indian three hundred and fifty years ago. This collector made no notes, but the crude axes and other artifacts in figure 60 from the Ott collection were all found in one field on the high bluff near the Fair Grounds, later known as an Andaste site. Wyalusing deserves careful study, for the sites are many and of widely separated periods. There are several groups from there in Tioga Point Museum, but very much more is scattered, unlabeled, and neglected. It boasts a higher culture than Teaoga, with its grooved axes, effigy pipe, copper celt, and other unusual artifacts.]

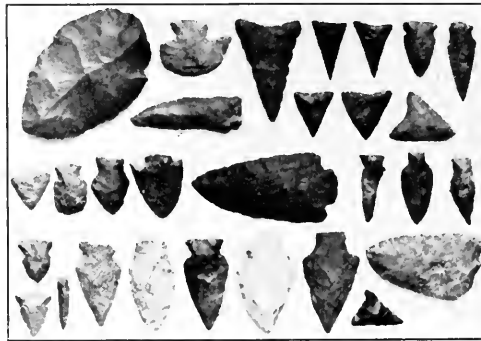


FIG. 61.—Algonkian artifacts from the Edgecomb Site; reduced one-half.
Ellsworth Cowles Collection.

Crossing the bridge near Nichols, we will turn west to Site 24 at the mouth of Ellis Creek, which is about opposite the Park farm site, where much has been found for the last fifty years, but of which there is no record. Here there was a large burial site, possibly established by the early occupants across the river. We regret the lack of satisfactory data concerning this.

We soon strike the old trail up Cayuta Creek, now a highway. On Talmadge Hill collector Cowles reports an interesting camp site (No. 26), evidencing several periods of occupation and some trade influence, yielding blades, scrapers, and points of all cultures and material, shown in figure 61, description of which seems unnecessary. This is near a large spring, and here was also found a bell pestle, rare in this locality, and a small stone pendant which

Mr. Skinner says is peculiarly Lenapé or Delaware, a nearly perfect circle of black stone showing much wear, about one inch in diameter and one-fourth of an inch thick, the eyes drilled to a depth of about one-eighth of an inch, and outlines of the nose and mouth being scratched on, with a hole at the top drilled through from the front close to the edge. We have seen but one other, which came from a very old site on the trail leading from Elmira to Seneca Lake. Near this was what Cowles calls a summer camp site close to a group of springs, with chipped hoes, several pecked pestles, barbed and hafted points of argillite, rhyolite, and yellow jasper, hammer stones, drills, knives, and a stone bead of native workmanship. A short distance beyond, another camp site yields many Algonkian spear heads and a curious rectangular celt. From the Shipman farm nearby the Cowles collection in the Museum shows unusual artifacts—a broken butterfly-stone of highly polished green granite notched at each side after it was broken that it might still be used as a pendant, a rectangular celt, a short pestle, a spear head with spiral chip made from a flint pebble; truly a wondrous hillside, from which many implements have been carelessly scattered. Retracing our steps we cross Cayuta Creek and come to the town of Waverly, N. Y., within the limits of which have been collected a few unusual artifacts, seemingly all Algonkian; e.g., an argillite winged drill, the only one in the Museum. Note the bird-stone ceremonial (fig. 65) from the collection of Dr. Tucker, found along the old Indian trail which is now the road to Valley View Club House. No doubt this point, commanding so much of the valley, was used by Indians for signal fires.

Abbott in his *Primitive Industry* tells of large mortars for common use, and such an one near a spring on Waverly Street, too heavy to move, is four feet square, about eighteen inches high, and with the depression six inches deep; whether a community mill or washtub who shall say?

Here we have left the Susquehanna and returned to the valley of the Chemung, concerning which we insert data from the late L. D. Shoemaker of Elmira, who for twenty years made an intensive study of the region from Waverly to Corning (forty miles) and from

Elmira to Seneca Lake. The annotated results of his untiring work should be of value to archaeologists in New York State as well as hereabouts. He says:

The Chemung has always been a turbulent stream, and its banks and adjacent territory show four distinct river terraces, indicating its former course and expanse over a period of hundreds if not thousands of years. On the higher terrace, now nearly half a mile from the present channel, has been found little else than rough blades and celts of argillite; on the second and third, the rhyolite knives, spears, barbed points, steatite and long pestles of Algonkian culture. On the

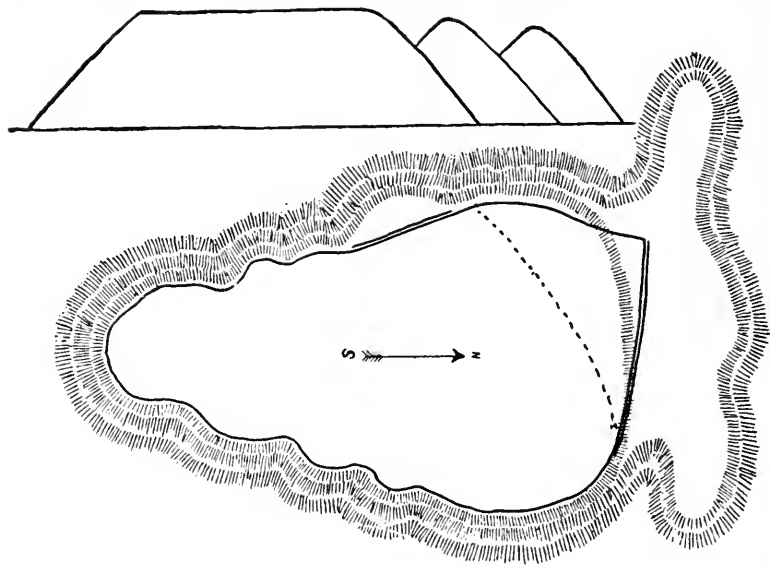


FIG. 62.—Outline of Spanish Hill and sketch of supposed fortifications of Carantouan on its top.

second terrace on pre-used sites, were found beautiful notched flint arrows and spears distinctly different from those of earlier periods, highly polished celts, butterfly and other ceremonial stones, noticeable absence of steatite, pottery of varying types. On the flats bordering the river as it runs today were the undisputed remains of the Iroquois and their later contemporaries or tributary tribes.

Mr. Shoemaker investigated all the supposed Andaste sites, and wrote an exhaustive description of Fort Hill at Elmira and its surroundings. We believe the three Andaste towns mentioned by Champlain may have been Fort Hill, Chemung, and Spanish Hill.

We now approach Spanish Hill, a drift mound "deposited when

the glacier was receding from this region," its intrenchments mentioned by travelers of 1795-1804 and others as "Spanish Ramparts" (source of name unknown). The traveler of 1795 describes it as "a mountain in the shape of a sugar loaf, about 100 feet high, with level top, on which are remains of intrenchments. One perpendicular breastwork is yet remaining, plainly indicating a parapet and ditch." In 1833 the visitor found "the remains of a wall which runs around the whole exactly on the brow, and within a deep ditch or intrenchment running round the whole summit." The double lines in the diagram indicate portions still clearly defined, evidently made much higher to protect those places most easily assailed. The dotted line indicates possibly an extra palisade for greater security, or protection for a covered way down the northern slope to a spring, further indicated by a deep cut seemingly artificial. The fortification seems to differ from the palisade work of the Iroquois.

As to the fortification and occupation of Spanish Hill (Site 27), we have been chiefly concerned with unwritten history, and, lacking space, had thought to leave final discussion as to the location of Champlain's Carantouan to some expert who would visit it in fair weather and make convincing "scientific investigations." But since our name has been connected with it and our decisions questioned, we are disposed to remember our research twenty years ago, when, inspired by reading Parkman and Brodhead, we endeavored to obtain definite information concerning the Andaste. We read Champlain's wonderful Journal in the original French. A note in this original edition said: "Carantouannai, there is reason to believe that these are the same as the Andastes." We visited General Clark, saw his correspondence with Parkman and Brodhead, and, guided by him, made a study of the old maps and some Jesuit Relations (Lalemant and Ragueneau) and were ready to agree with his decision placing Carantouan—the town to which Champlain sent Brul —on Spanish Hill. "The size of this work (Carantouan)," said Gen. Clark, "would accommodate the number of warriors and their families as given by Brul , and no other fortified work in all that section of the country approaches anywhere near the requirements of Brul 's estimate."

¹ See Parkman's *Pioneers of France in the New World*.

The failure of the Susquehanna Archeological Expedition to find real evidence of a village on the hill was disappointing, but was no doubt due to the wet weather as well as the fact that the surface has been scoured by collectors for a hundred and twenty-five years.

Spanish Hill, from name to aboriginal occupation, guards its secret well. We know it was fortified, as shown by the accompanying diagram made during the lifetime of the oldest residents in the vicinity (fig. 62). We accept the decision of Mr. Shoemaker, who, at Mr. Moorehead's suggestion, made careful investigations in the early spring and late fall. He made only slight excavations, but found every evidence, on the surface, of a long-continued village site—darkened earth, shell heaps, corn caches, flint chips, and various implements. His observations are on record in the Museum. Bushels of potsherds have been gathered, both Algonkian and Iroquois. We concede that the group of artifacts from the top of the hill, shown in figure 63, is not distinctively Andaste. We can not decide the culture of the unusual metate (B in fig. 64) or of Mr. Lang's unique sandstone pipe with its concentric rings of drilling. The ossuary or cemetery, known as early as 1806, has not as yet been found; but no real search has been made except that by the Susquehanna Archeological Expedition. We are not ready to admit that our conclusions are based on "unscientific grounds," and hope it may yet be proven even to the theorist that the last Andaste stands were on Spanish Hill, Fort Hill, and at Chemung, all natural strongholds, easily fortified, on the border of the territory of the invincible Iroquois.

Let us skirt the foot of the hill and look on the Chemung River flats for indications of an older occupation than that of the Cayuga, whose town in 1763 was known as Ganatocherat (Site 28). From the quantities of artifacts collected here, this site knew long occupation. But in all the collections studied we have found absolutely nothing to prove this an Andaste site as Dr. Donehoo theorizes; nor have we any evidence of the Andaste village that he has suggested might be found between Spanish Hill and the Andaste cemetery on Upper Queen Esther's Flats. The Pittsley collection

in the Museum and the Landon private collection are probably the largest made here; Mr. Lang has all the large implements of a

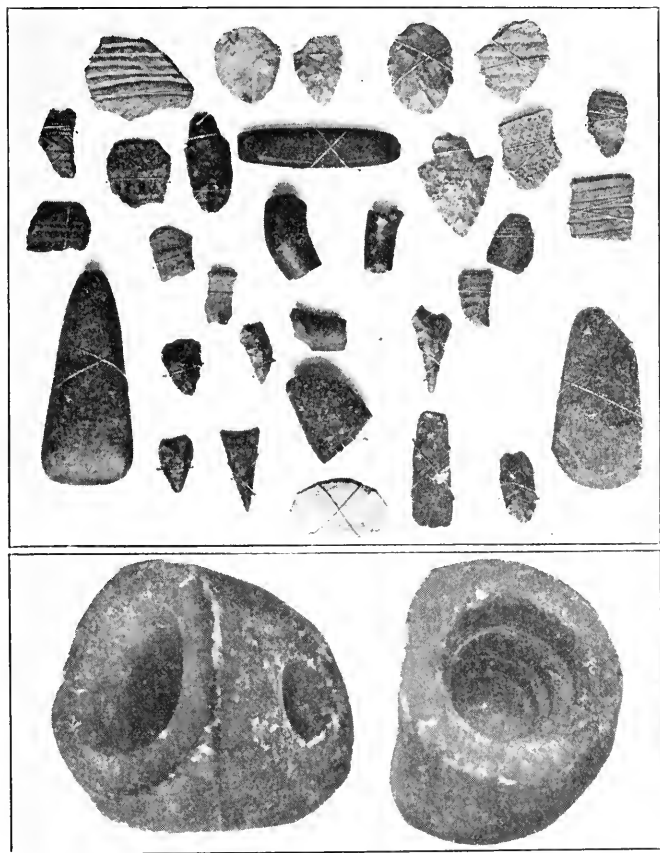


FIG. 63.—Artifacts from Spanish Hill; the pipe is of sandstone, and of the size here represented.

long used village site, the most unusual being a deep oval metate, not reproduced, also large scrapers shown in figure 65. There are also relics in I. P. Shepard's collection in the Museum, and in Dr. Tucker's private collection, to our regret unlabeled and only partially examined. The Landon collection—as far as it has been possible to examine it—has many notched and stemmed long

points of the New Jersey type, no argillite or rhyolite, but several of the rough, thick, triangular points classed by Abbott as prehistoric. Many resemble those found at the mouth of Cayuta Creek, and one has a drilled perforation about one third of the length from the base. Figure 66 has a club head or short pestle

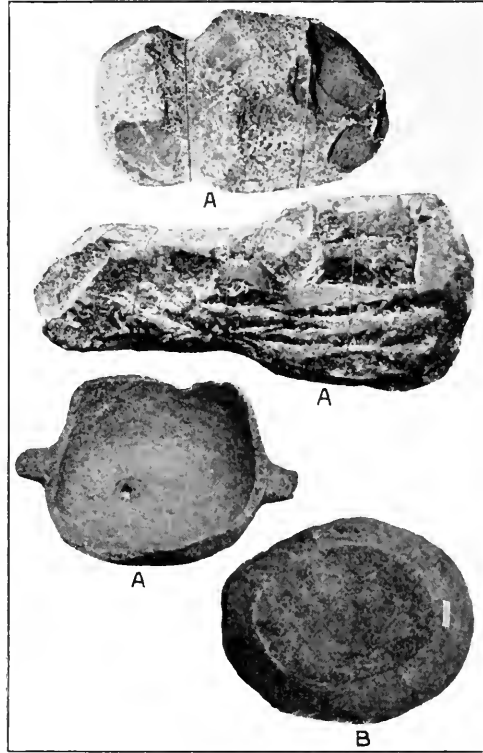


FIG. 64.—Objects from Chemung sites: A, Algonkian axes and a "dead" steatite dish; B, a small stone mortar or metate 12 in. in diameter.

with diagonal groove found on this site, a rare type. There is a very small proportion of Iroquois points from this site, but quantities of Algonkian potsherds.

Exploring along the north bank of the Chemung, on a high terrace that was once the bank of the river now a quarter of a mile distant, at Sullivan's Eddy, Mr. Lang discovered an old village

site (No. 29) undoubtedly archaic Algonkian, with little evidence of later occupation. This site abounded in rough implements, some of which are shown in figure 64 (marked A). Note the "dead" steatite dish. Following the old Indian trail, still discernible at intervals, we find numerous camp sites along the river, a distinct village site (No. 30) at the mouth of Wyncoop Creek, and west of Chemung village, on another old river terrace, a site (No. 31) easily determined from Mr. Lang's investigations of twenty years ago to be that of a palisaded town of fair extent protected on one side by the creek. Corn caches and other evidences of permanent occupation have led us to believe this was one of the three Andaste towns mentioned by Champlain. Unfortunately there are no labeled artifacts from this site, which should have had more careful investigation with recorded data. The ground just covered, extending to the western limit of our survey, has been explored by Lang, Shepard, Pittsley, Coleman, and Cowles, some of their collections being shown in figures 65 and 66, and we believe much more may be found in the private collection of Dr. Tucker—unclassified however.

We are not sure whether the site at Sullivan's Eddy or the palisaded town was "Old Chemung." Here we cross the bridge and survey the south bank, finding as before a village site at the mouth of every creek and some between, evidencing occupation at different periods. Wilawana (Site 32) comes first, of which we know little in prehistoric times, but it is frequently mentioned in early archives. Yet many collectors have here found prehistoric relics (some shown in the lower part of fig. 65).

Perhaps no collection in Tioga Point Museum has a greater variety of pre-Iroquoian types than that of E. S. Coleman, collected entirely from both banks of the Chemung River between Wilawana and Spanish Hill, largely at Sites 30 and 33. Triangular celts, chipped flint blades, hafted, barbed and bifurcated arrows, many of rhyolite, soapstone fragments, broken ceremonial objects, and Algonkian potsherds abound (fig. 66). Dr. Tucker shows a plain elbow pipe from Chemung, and Cowles a Catawba pipe (both in fig. 65) found near the historic village site of the Tutelo. Before

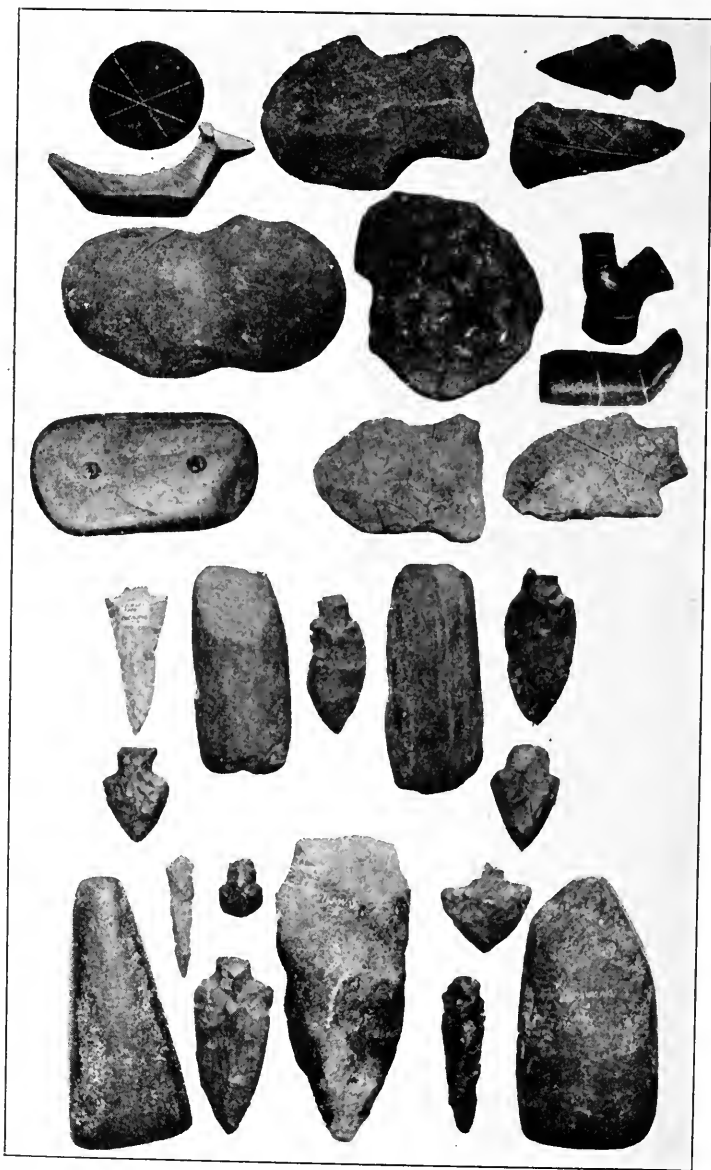


FIG. 65.—Algonkian artifacts and Tutelo pipe.

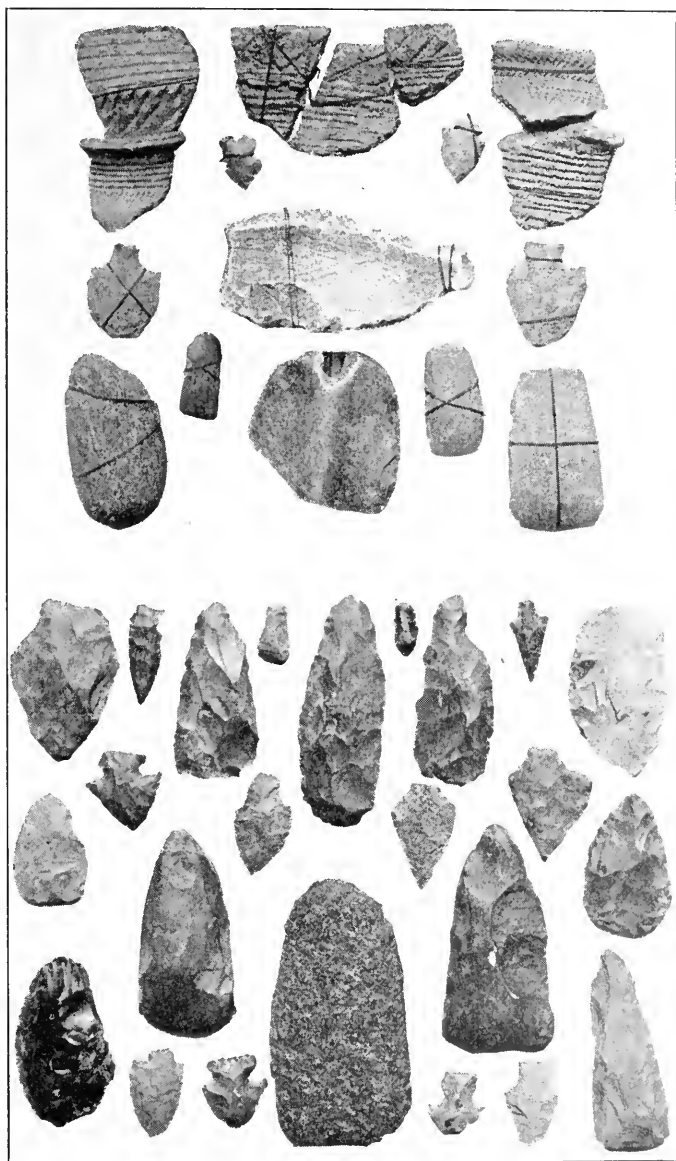


FIG. 66.—Artifacts from the Coleman Collection, principally Algonkian but including one Iroquoian potsherd; reduced one-half.

reaching the last-mentioned, we pause at Queen Esther's Glen, a curious cleft in the rocks, whence came the rude two-holed ceremonial object in figure 65. Next comes the Elsbree farm (Site 35) where some years ago, in excavating for a foundation, graves were found which Mr. Lang investigated and thus describes:

Here I disinterred a number of skeletons that disclosed haste and lack of care in burial; a ditch having been dug and remains thrown in without order, seemingly indicating epidemic, massacre, battle or some other calamity. The ditch was V-shaped and skeletons compressed in apex; no artifacts were found in association.

Mr. Lang has remarked that between this spot and the river, both up and down stream, there are surface indications of Indian occupancy prior to the Iroquois, though some specimens show the culture of the latter.

The Tutelo town of 1743 was in the angle of the mouth of the creek which still bears the same name. The Siouan tribes of Tutelo and Saponi, and the Algonkian Conoy were transients under the Iroquois régime. Close to this place the mountains come to the river's edge. We will cross and turn toward Athens, not without mention of a burial site in Keystone Park, midway between the rivers, discovered some years ago, investigation of which was not permitted. Along the east bank of the Chemung on the old Tyler farm we pass another village site (No. 36) which occupied the upper river terrace, every vestige of the artifacts from which is scattered, and only scanty verbal records of them remain. Here the boy collectors of twenty years ago gathered their arrow points, stoned the pottery to pieces, and seldom preserved a single curio.

In reviewing our survey, we conclude that it is most evident that these broad, fertile river flats invited to occupancy all aborigines who were agriculturally inclined, as there are no implements more in evidence than those used for cultivating and grinding maize. It is increasingly evident that we have only lightly touched the borderland of scientific investigation and visualized for the reader but a small part of the available artifacts.

We have reached the end of the trail; and here on this very ground where Brant held many a council, where for long years

prisoners were brought en route to the land of the Iroquois, where the British, the Tory, and the red man assembled to embark for the tragic descent on Wyoming, here today is Tioga Point Museum established to preserve the memory of the participants in all this vivid history and maintained for the benefit of the student of anthropology and archaeology.

 TIOGA POINT MUSEUM,
 ATHENS, PA.

TINNEH ANIMISM

By JOHN W. CHAPMAN

IT is the object of this essay to take up some of the most conspicuous of the principles laid down by Dr. J. Warneck in his discussion of the religion of the Battaks of the Indian Archipelago,¹ and to show by an illustration from a new source how well worth considering is his proposition that "Animism is the key to an understanding of . . . all that is commonly called heathen superstition." Dr. Warneck says:

An exact acquaintance with [Animism] is indispensable to an understanding of heathenism, because it is found all over the earth, and not only among the peoples of the Indian Archipelago. We find traces of it in almost every region of the earth, and every student of religion must reckon with it. The study of Animism gives a surprising insight into the inner life and thought of primitive peoples. With all its strangeness, this exotic world of ideas proves that even the "savage" thinks, and feels the need of a reasoned view of the world.

Whether the general description of Animism in the chapter on "Battak Heathenism" is accurate or not does not fall within the scope of this paper to discuss. It does furnish an excellent basis for comparison, and, while it is too long to quote entire, it may be abbreviated in such a manner as to bring into view some remarkable points of coincidence between the Battak system and that of the Tinnah of the lower Yukon.

In the citations which follow I shall indicate these coincidences by italics, and the reasons for regarding them as such will be more fully presented farther on.

To the Animist (says Dr. Warneck) the "soul" is something entirely different from what we understand it to be. *It is an elixir of life, a life stuff, which is found everywhere in nature.* Man has two souls, one of which, the bodily soul, pertains to him during his lifetime. It is a power outside himself, conditioning his earthly well-being, but does not essentially belong to his person; at death it returns to the animistic storehouse. The other soul, the shadow soul, emerges only when the man dies. It is the shadowy continuation of his person, the part of

¹ *The Living Christ and Dying Heathenism.* Fleming H. Revell Co., New York.

his individuality that continues to live. The soul of the living man is conceived of as a kind of life-stuff, indestructible, and *animating alternately this man and that*. Among peoples of a lower grade the soul-stuff is conceived impersonally, as a vital power which at the death of its present possessor passes over to something else, man, animal, or plant. Higher developed peoples conceive the soul as a refined body, to some extent an *alter ego*, a kind of man within the man. But this soul never coincides with his person, but remains outside his consciousness. It is handed over to man at his conception from the loan office of nature. But *it is so independent and incalculable a thing that it may at any moment leave him for a longer or shorter period, as for example in dreams, or when it is frightened, or when it thinks itself insulted. The well-being of the man depends upon its moods. It can be nourished, strengthened and augmented: it can also be weakened, diminished and enticed away.* . . . The soul pervades the whole body, all the members of which are sharers in the soul-stuff, and therefore have a life of their own, a feeling of their own, and a will of their own. It is not the man who sees and hears and walks and breathes, but the eye sees, the ear hears, the foot walks and the mouth breathes. It is not the man who feels pain, but the part of the body where the pain is located. If the soul-stuff is removed from a member it feels pain and becomes ill. In man and beast this soul-stuff is found specially abundant in the head. . . . Head hunting has its root in this idea. The vital power and courage of the dead man is appropriated by him who possesses his skull. Medicine and magic are made out of human heads. . . . There is much soul-stuff in the blood, for life ebbs away with the blood. . . . Strength is imparted by drinking the blood of the slain foe. . . . Soul-stuff is ascribed to the placenta. There is a mysterious connection between it and the child, its "elder brother," all through life. . . . *The decayed piece of umbilical cord is carefully preserved. The hair also contains much soul power, and is therefore not cut by the heathen.* . . . *Saliva is medicinal, because it contains soul power.* . . . *The sweat also, as a secretion of the body, contains soul-stuff, and so far as it communicates itself to the clothes, these become saturated with soul-stuff.* . . . *A man's name is closely connected with his soul. It is therefore holy, and should not be named except when necessary. No one should utter his own name or that of his parents. If one knows the name of anyone, he thereby obtains a certain power over him.* . . . *It is very important that children should get the right name, and it is the duty of the magic priest to put them on the scent.* . . . *Sometimes hateful names are given to children, to make the envious spirits believe that the children are inferior. (If a child is born into a family which resembles some dead member of the family they say the dead man has reappeared in the child, and the name of the dead man is therefore given to the child. If an infant cries much it is a sign that it has not got the right name).* . . . *The soul does not hesitate to leave men if anything displeases it, for it does not essentially belong to them, and has no interest in its temporary dwelling. Hence caution must be used in chastising children. Give them their own way, lest the sensitive little souls leave them and they die.* . . . *Whilst the soul is represented as life-stuff, that stuff is also ascribed to animals and plants.* . . . *Objects also which are of value to men*

are thought to be animated, for their usefulness leads to the inference that they possess soul-stuff. *Soul is awarded to the hearth, the house, the boat, the hatchet, iron, and many other instruments, not because they are fetiches, but because their usefulness is proof of their soul power. . . . The souls of men, animals, plants, and even those of lifeless things invigorate one another. One can augment or invigorate one's own soul-stuff through that of others. . . . The important thing in eating and drinking is not so much the matter of the food as its soul-stuff, for this alone gives health and strength to the eater. No animistic heathen, therefore, expects the gods, or spirits, to consume the material of the food which he places before them as an offering, but only its soul-stuff. . . . The flesh of an animal that is eaten produces an effect on man corresponding to the qualities of the animal in question. . . . The numerous prohibitions as to food in sickness are rooted in this idea. Certain foods in some circumstances drive the soul out of the body, and these must be avoided. When heathen people come to the missionary for medicine, they never fail to ask what food the sick man is forbidden to take. For the missionary, who is regarded as a magician, must know the kind of food to which the soul has an aversion at the time. . . . There are also objects which, in themselves, have no soul matter, but for some reason have such matter ascribed to them. Some peculiarly shaped root, or some wonderful stone is seen, and its striking shape is supposed to indicate an indwelling soul power. . . . Such objects may be called fetiches. . . . In this sense amulets are fetiches. They are mostly stones, scraps of lead, and things of extraordinary formation; these are carried about, and credited with the power of increasing their possessor's soul-stuff, and protecting him against evil spirits. . . . The human soul can be decoyed away by other souls, and the souls of children are especially sensitive and difficult to preserve. No one must visit the parents of a recently born child without bringing a present for the child's soul. . . . The spirits of the dead are more capable than the living of drawing souls to themselves. . . . Souls may be blended. This consideration makes one like to be spat upon by people who are accounted fortunate. People who are clever at speaking are entreated to spit into one's mouth. Sick people are breathed upon by the healthy, in order to bring them healthy soul-stuff. When a man dies, his soul power leaves him, in order to animate other things, men, beasts or plants. It always remains a power on this earth that can never be exhausted. The soul that continues to live, which must be clearly distinguished from the corporeal soul, is called begu—spirit, ghost. At first it feels very uncomfortable without a body; it searches for its old body and surroundings; it sits on its grave and terrifies the living. . . . For a long time it is not safe to be near the house of the dead at night, because the dead man is moving about there. From the moment of his departure the spirit of the dead is feared, as, out of ill will, he would like to drag others with him into death. . . . A great number of things are to be observed in connection with the corpse, with its burial, and afterwards. All their mourning customs are rooted in their fear of the dead. The hair is cut off, an offering to the dead, *pars pro toto*. It is fear that leads them to place food on the dead man's grave, to bring him his tools and coin, that his shadow may use them in the other world and be content. . . . As soon as the*

coffin is brought into the house, the body is placed in it and the lid is fastened down, else the soul of some living person might slip into it. . . . They . . . bathe after the funeral. . . . The coffin is not carried out by the door in the usual way, for the soul must be deceived."

It will be noticed that in making the above citation I have drawn attention, for the most part, rather to coincidences of fact than of theory. This is not from want of sympathy with Dr. Warneck's deductions, but merely because the evidence is not always convincing that the Tinneh native would give the same reason for any particular observance that the Battak would. For instance, both the Tinneh and the Battaks cut the hair when a relative dies and place food on the grave; but the reason given for the Battak observance is fear of the dead, while that given by the Tinneh is grief, and solicitude for his welfare. I have ventured to subscribe to Dr. Warneck's important deduction that the soul is "an elixir of life, a life-stuff, which is found everywhere in nature," not because the Tinneh native so describes it, but because it furnishes a working hypothesis which appears to harmonize everything so far discovered, and to contradict nothing. The distinction between the corporeal soul and the shadow soul I have not emphasized from the desire to be conservative; yet there is much which would appear to support it.

To the student of the Tinneh system the description above given comes as an astonishingly accurate picture of the subject with which he has become more or less familiar. Even to the casual reader the coincidences indicated by the italics must suggest a resemblance between the two systems which is more than fortuitous, and points to a unity in the essential principles underlying each. In some directions the religion of the Battaks has had a further development than that of the Tinneh. This is the case with ancestor worship, which is found among the Tinneh only in a rudimentary form, if it is to be found at all. Fatalism also, which is highly developed among the Battaks, is apparently non-existent among the Tinneh.

The Tinneh, like the Battak, is a believer in the preëxistence of souls, in the future existence of souls, in the existence of souls in the lower animals and in inanimate objects, in the power of one

soul to affect another, and particularly in the power of the spirit of one who has lately died to attract to itself the spirits of the living, and in reincarnations. Like the Battak he has his mediums, who declare to the living that which they have received from the dead, and like him also he makes offerings and pours out libations for the benefit of his friends who are deceased, but apparently more from the desire to procure for them some satisfaction than from fear of what they may do to him if he neglects them. Like the Battak he believes in the existence of evil spirits and tries to propitiate them by offerings, and these spirits would appear to be a different order from the spirits of human beings. Finally, he has a vague belief, not yet touched upon, in the existence of a beneficent Creator, as the Battak also has, and like the Battak he has suffered the idea of this Creator to fall into the background of his consciousness, and offers him neither worship nor sacrifice, reserving his propitiatory service for those beings who seem to him to have a more immediate influence upon his destinies.

The belief of the Battak in preëxistence may be inferred from the legends that give an account of man choosing his own destiny before being born into this world. The same belief among the Tinneh is to be inferred from a tradition by which birthmarks are explained. According to this tradition, there is a place filled with the spirits of little children, all impatient to be "called," i.e., born into this life. As one is called, the rest slap him, through jealousy and impatience, and the marks of their rough treatment persist.

Among both peoples there is a body of tradition regarding the life of the future, and of the belief of both it might be said, as Dr. Warneck has remarked, "The other world is but a shadowy continuance of the earthly life, and of the values that hold good here." As to a belief in immortality, in any true sense, it is denied for the Battaks on the strength of a positive tradition, and it could hardly be claimed by the representative Tinneh, who is prepared to maintain that the white men who have of late years come into his country in such numbers are the reincarnations of deceased Indians.

There is a tradition among the Tinneh of the lower Yukon, that soon after death the spirit makes an underground journey to the city of the dead, somewhere near the sources of the river, but on

the farther side of the divide. On its arrival it is received by the inhabitants of the city, who come out to meet it. Its own relatives are in advance of the rest, and they welcome it and conduct it to the custodian of newly arrived spirits, who takes it in charge overnight.

The welfare of the spirits of the deceased is dependent to a considerable extent upon the living, who make feasts in their honor, and give away garments and food, from which the dead are supposed to receive a benefit. These feasts would appear to have more about them to indicate a true regard for the dead than the corresponding feasts among the Battaks, where the motive ascribed is fear.

The belief in reincarnations among the Tinneh has already been alluded to. It receives further confirmation from a very interesting belief regarding the spirits of infants. When these die they are not buried in coffins, but are wrapped in a mat and buried at the foot of a young and vigorous spruce tree, in the belief that the life of the tree will in some way assist the soul of the child to remain available for another appearance in the flesh. The parents therefore comfort themselves, thinking that they may receive their child again. The connection which is here asserted to exist between the life of the spruce and that of the child would point toward an acceptance of the view that the Tinneh and the Battaks have the same conception of the nature of the soul, or invigorating principle. There are other indications which tend to confirm this view. Among these are ideas which the Tinneh entertain with regard to the souls of bears and other animals, and also of inanimate objects. If we add to these the notion of special virtue residing in the secretions and in various parts of the body, as the hair, heart, and so on, and further, the notion that one's soul power may be augmented, diminished, or enticed away as the result of the influence of soul power obtained from another or imparted to him, we shall have very strong grounds for concluding that the two peoples, so widely separated geographically, are nevertheless possessed of a common method of reasoning concerning the phenomena of life.

The belief of the Battaks has been sufficiently indicated in the citation which has been used as a basis of comparison.

How closely it is paralleled in the belief of the Tinnēh may be judged from the following observations.

They think that in hunting bears and other animals we are really hunting souls, which have those forms as their presentments. Every hunter has his songs, with which to charm the spirits of the animals which he pursues. Our souls are hunted in the same manner. Bear meat is not to be eaten by the women. The hunter eats the heart of the bear to obtain courage. The heart of the porcupine is even more efficacious for this purpose, for he runs from nothing. It is on this account, perhaps, that he was the first of the animals created. The heart of the rabbit must not be eaten by children, for it will make them timid. The feet of the ptarmigan, which runs swiftly over the snow, are attached to the snowshoes of children, in order that they may be good runners.

Nowhere, perhaps, does the character of these beliefs have a better illustration than in the Feast of Animals' Souls, which is held annually. At this feast images of all the animals that are hunted are carved upon the ends of sticks, and hundreds of these are stuck up around the interior of the council house and propitiated with songs and offerings. It is significant that among these images are also to be seen representations of bags of flour, guns, and other things useful for maintaining life. An aged Indian who was asked whether the people supposed that the images could understand what was being done answered, "No, but the animals upon the mountains see it, and they are pleased." This was said during a ceremony in which water was sprinkled over a group of images representing a herd of deer.

The fact that souls are attributed to insensate things has a more striking confirmation from the custom of patting and rubbing a gun or other implement that has fallen, to restore the soul that has suffered a shock, just as a man's soul is restored under the same circumstances.

Not only does the Tinnēh belief resemble that of the Battak in ascribing soul to animals and to inanimate objects, but there is the same agreement with respect to the secretions and to the influence which one soul may have upon another. The Tinnēh believes that the clothing, utensils, and other possessions of a good

hunter convey virtue. The sputum of a consumptive must not be burned, for it will take away some of his vitality. The hair must not be burned. Old people sometimes put their spittle into the mouths of children to bring them good luck. Healthy persons breathe upon one who is sick in order to invigorate him; but, if the patient is too far gone, they will not do it lest their souls should get entangled with the departing soul and leave them.

The law of taboo, by which certain things—and notably certain kinds of food—are forbidden to certain persons, is found in operation among the Tinneh, as among the Battaks. Prohibition of the eating of the rabbit's heart by children is only one of many illustrations. Fresh fish is forbidden to women under certain circumstances. Red food must not be eaten by a person who is subject to hemorrhages. This may be taken in connection with the fact that it is forbidden to cut the hair of a person so afflicted, and also in connection with the fact that the Tinneh, equally with the Battak, will claim that the spirit of a deceased person, or one of those evil spirits, not human, whom he desires to propitiate, is benefited, not by the substance of the food which he sets out as an offering, but by its soul, of which alone he makes use, and the inference is not a difficult one that the Tinneh believes, as the Battak does, that the souls of men can be influenced by the souls of inanimate things. Indeed, it is a fact so obvious as hardly to deserve the name of an inference.

The Tinneh freely admits that his medicine has no power over the white man. His explanation of this is that white men have no souls. Viewed in the light of his belief that white men are deceased Indians, this is not, perhaps, so irrational after all. It is difficult to tell what kind of medicine ought to be prescribed for a ghost.

A comparison of the beliefs concerning the importance of names furnishes some singular coincidences. Reluctance to give one's name might be attributed to bashfulness; but what shall we say with regard to the following particulars in which both systems agree?

1. It is important that the children should get the right name, and it is the duty of the magic priest to put them on the scent.

2. Hateful names are sometimes given to the children. The Battak does this to make the envious spirits believe that the child is inferior. The Tinneh says that if he loves his child excessively it will die, and that he gives it a bad name to conceal his affection.

3. More remarkable still, if an infant cries inordinately, both peoples attribute it to the same cause, that the child is seeking to be named after some particular relative who is deceased. The Tinneh have an expression, "He is born like . . .," e.g., "He is born like his grandfather." This means that the relative who is deceased is seeking to become the special guardian of the child. It is here that the magic priest is called in, to determine whether the surmise of the parents is correct, and the child receives his name at some public gathering, as a potlatch or a mask feast. This name he retains during his childhood, and at maturity he receives another name.

The belief that the soul may leave the body for a time, as in dreams or when it is frightened or feels itself insulted, has been noted as a tenet of the Battaks. There are numerous examples of its occurrence among the Tinneh. With regard to the punishment of little children, "Give them their own way," says the Battak, "lest the sensitive little souls leave them and they die." "Do not frighten them," says the Tinneh. "If they are punished too much their souls will get cranky and leave them." The Tinneh have to exercise great care not to subject the soul of the newborn child to any sudden shock. For twenty days the father is not allowed to chop wood or to do anything requiring severe exertion. He is not put to bed to keep him quiet, as among some primitive people, but all his movements must be regulated with the greatest caution. If he leaves the house a pair of scissors or a scrap of tin or some other metal is placed upon the breast of the child as a kind of shield to protect its soul.

As among the Battaks, the soul may leave a person for a time, or may be enticed away, to the detriment of its possessor. The medicine men have their trances, when the soul is supposed to journey everywhere, and to find out the secrets of the future. To eat the eyes of a man is supposed to confer the power of traversing the air. A sudden shock may detach the soul, and it may depart

during a fainting spell. The expression, "he came to himself," in the parable of the prodigal son, would be intelligible to a Tinnéh, but in a different sense from that which it conveys to the English reader.

As we might expect, the mortuary customs of the Tinnéh furnish many illustrations of their belief in this detachable quality of the soul, and they also point toward the distinction between this soul, or life principle, and the spirit, or what Dr. Warneck calls "that part of the individuality that continues to live." Here, as I have already indicated, there are many striking parallels.

1. The hair is cut by the mourners.

2. The spirit of the dead is feared, as he would like to drag others with him into death. Among the Tinnéh, it is the duty of the medicine man to find out whether there are any souls in the community which are detached from their owners, at the time of a death, and would on this account be liable to be enticed away by the spirit of the dead man. If he discovers these, they are ceremonially restored to the ones to whom they belong, before the burial takes place.

3. As soon as the coffin is brought into the house, the body is placed in it, and the lid is fastened down, else the soul of some living person might slip into it. The Tinnéh put off the making of the coffin as long as possible. If it is made at some distance from the house of the deceased, it is not taken to the house until the body is to be placed inside. If it is left in the shop overnight, the lid must not be placed upon it, and the tools which were used in making it must be placed inside.

4. The coffin is not carried out by the door, in the usual way, for the soul must be deceived. The Tinnéh sometimes take off a portion of the roof. In former times the body was taken out through the smoke-hole, instead of by the door. Before the coffin is taken out it is sometimes passed several times through the fire, that the soul may not follow it. A new trail is sometimes cut through the bushes, still further to deceive the soul. Whether this is the spirit, as distinguished from the corporeal soul, is not clear; but this is probably the correct view. It is undoubtedly true that the Tinnéh fear the spirit of the deceased person, sup-

posing that it is engaged in trying to entice their souls away from them. Dr. Warneck speaks of two customs of the Battaks which result from this fear. Thorns are put into the grave, to keep the spirit from coming back, and the personal belongings of the dead man are taken to the grave and scattered along the path, so that the spirit may not come back to the village looking for them. There are no thorn bushes in the valley of the Yukon, but wild roses grow in abundance, and there is at least one known instance of an Indian woman having placed these briars in the grave of a child. This may have been to prevent its reincarnation, for the parents had lost several children and had become discouraged and wished not to have another. The place which the dead man occupied during his sickness is switched with briars after the body has been removed. Frequently some of the bedclothing or other belongings of the dead person are left near the grave.

5. Food is placed on the grave, and the utensils of the dead man are also brought thither. The Tinnah graves may be seen decorated with the snowshoes, guns, belts, and other belongings of the dead, and, as we might expect, food is placed upon them. Sleds used in transporting the body are broken and remain at the grave.

6. Bathing after the funeral. This custom, mentioned by Dr. Warneck, is also found among the Tinnah. It is a ceremonial cleansing. Like many of the customs mentioned in this paper, it may have fallen into disuse, but the custom formerly was that, after a funeral, the men should assemble in the council house and bathe. The medicine man was then called in, and under his directions all went through the motions of cleansing the hands and were then pronounced clean.

7. For some time after the funeral, the house of the dead man is feared at night. Anciently, among the Tinnah, for four days after a funeral all work was forbidden in the village. At evening of each day a signal was given, and all the curtains were drawn. Everyone went to bed at once. In the morning they rose at a given signal. In practice, this rule was felt to give too much inconvenience, and by a shortening up process the observances of four days were compressed into the space of about an hour. Notwithstanding these precautions some perverse ghost might come as

far as the entry, being unable to enter the house. If his voice should be heard by the living, the soul of the auditor would be in danger of going off with the ghost.

This account, condensed as it is, would be inexcusably incomplete without somewhat further mention of those beings which seem to be in a class outside the ordinary type of spirits with which we have been concerned. We are indebted to the Rev. Fr. Julius Jette for having distinguished four principal spirits whom the Tinnéh think it necessary to propitiate. These are the Spirit of Cold, who kills men by freezing and then covers them with snow; the Spirit of Heat, who is at enmity with the Spirit of Cold and usually helps mankind; the Spirit of Wind; and the Spirit that Kills Us, an evil being who devours souls and so causes death. There is an extremely curious custom by which the wind is propitiated. One must get some young crows and set them adrift on a stick. So long as the mother follows and cares for them, there will be no wind; but should they come to the shore the wind will begin to blow. A short period of good weather may be secured by putting a louse on the water. So long as it keeps afloat the weather will be good.

Of the Tinnéh belief in evil spirits there can be no doubt. The evidence of their belief in a beneficent Creator is slight but it is worth consideration. At least two different observers have come upon the account of a Being whose name is too sacred for common use. One has reported this name as Trorto. It would seem that he is the Creator. There is a common notion that the Raven is the Creator, but this is denied by an aged native who claims to have heard from his grandfather that the Creator made all things good, but that the Raven appeared, a different person, and mischievously threw everything into confusion. There seems to be good reason to think that it has always been customary to comfort orphans by telling them that there is One above who cares for them. As a means of comparing the Tinnéh belief with the Battak, and as a suitable conclusion to this essay, I offer a quotation from Dr. Warneck's account of Battak heathenism:

We have seen that one root of the Battak religion, and that the weakest, is its relation to mythological deities. A second root, the most vigorous of all, is the

fear produced by the secret, uncomprehended powers of nature. There is a third, very delicate and very difficult to discover, though deeply imbedded in the soul of the people. The eye, searching in the darkness, perceives the outline of a thought of some omnipotent power reigning over all those deities. Among the Battaks this is reflected in the general name, Debata, i.e. God. He is called simply God, also Lord, and Grandfather. [It is somewhat remarkable that the Tinneh also refer to the Creator as Grandfather, and that the name has been transferred to the Raven.] The idea which is here come upon of a supreme God is very vague, and is always in conflict with animistic feeling. . . . No Battak can explain why, in many situations of life, he passes over Batara Guru and the other gods, and feels that he is related to the Debata. That can only be explained by assuming that there is in the popular consciousness the remains of a purer idea of God, alongside and above the recognition of a plurality of gods, a view also that cannot be derived from those. . . . He is not worshipped; He is scarcely even feared; He is so little known that nothing can be said about Him, save that one occasionally flees to Him. He is really in contradiction with the form in which those heathen religions appear today. The realities of animistic heathenism are Polytheism and worship of spirits, together with the fear and magic that accompany them. Nevertheless, though painted over with colors of the loudest tints, the delicate outlines of the original picture have never been effaced.

ANVIK, ALASKA.

THE STONE STATUES OF NICARAGUA

By S. K. LOTHROP

ARCHAEOLOGISTS have known for many years that large stone statues are found in the region of the great lakes of Nicaragua. However, as yet no serious study of the problems raised by these figures has been made, and I therefore propose to discuss a few points in connection with them.

In height the statues range from three to twelve feet, and the subject is invariably a human being, usually male, and often shown in conjunction with an animal figure. The types of particular interest are as follows:

- I. A human figure, to the back and shoulders of which clings an animal (fig. 67, d).
- II. A human figure bearing on its head the head of an animal (fig. 67, b).
- III. A human figure shown in conjunction with an animal or an animal head, within the jaws of which appears the human head (fig. 67, c). Sometimes the animal head of this type is partially conventionalized (fig. 67, a).

These three types form a unit series in which certain changes take place. Thus, starting with a complete animal figure carried on the back of the man, we end up with the human head within the animal jaws. This series is obviously connected with a conception common among the ancient Mexicans and Maya, but it is distinguished from the Mexican and Mayan treatment in that the Nicaraguan body is always human, even when the head is enclosed in animal jaws, while the Mexican and Mayan body is characteristically an animal, within the jaws of which appears a human head.

In addition to the above types there are:

- IV. A human figure seated on the top of a tall column.

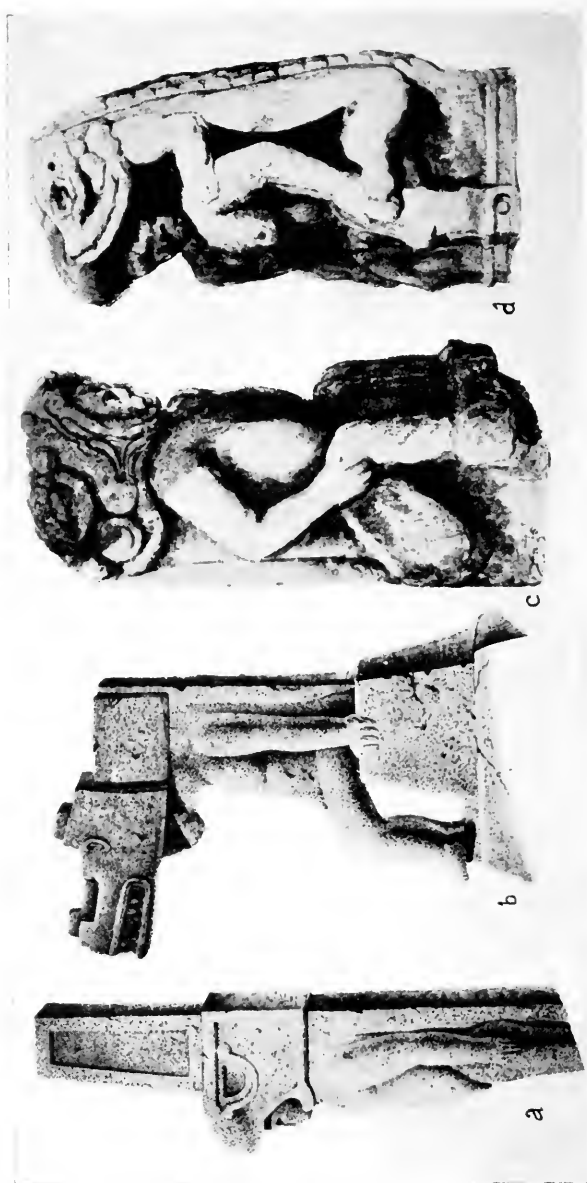


FIG. 67.—Types of Nicaraguan stone statues.

- V. A human figure with a large gorget held in the hand or suspended from the neck.
- VI. A human figure with the arms folded across the chest.
- VII. Stone columns with pictographs.

In distribution these statues come into direct contact with the Maya area. Dr. Gordon discovered in the Uloa Valley a rather crude sculpture (figure 68, a) which is comparable to a figure discovered by Squier on Zapatero Island in Lake Nicaragua (fig. 68, b).

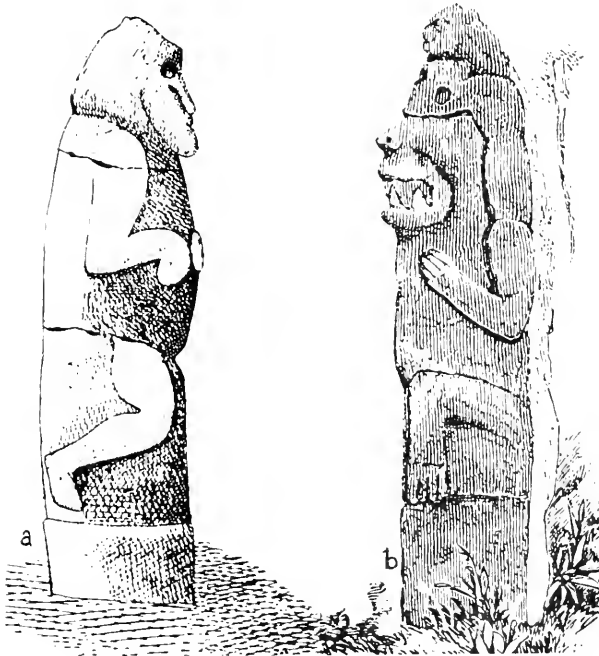


FIG. 68.—A stone statue (a) from the Uloa Valley Honduras, compared with a figure (b) found on Zapatero Island, Nicaragua.

Seler found near Comitán, a town in southwestern Mexico, a statue (fig. 69, a) stylistically very close to one of the Nicaraguan types (fig. 69, b and c). This form, the fourth of our classificatory system, represents a man seated on the top of a tall column. The capital of this column is round while the shaft is usually square.

A third pair of statues of greater significance is seen in figure 70. The standing figure (a) was found on Zapatero Island and is en-

tirely typical of that region. A seated figure (b) was found by the writer at La Florida, a town some sixty miles from the great Maya city of Copan and itself surrounded by ruins of Maya type. The La Florida sculpture bears on its back a small animal figure, which, we have seen, is a Nicaraguan feature and is not characteristic of Mayan art.

While the La Florida figure belongs in the same group with what we have called the Nicaraguan figures, it also is stylistically



FIG. 69.—A stone statue from southwestern Mexico (a) compared with statues of Nicaraguan type (b, c).

affiliated with a group of crude sculptures found principally in the highlands of Guatemala (fig. 70, c), which are probably a local development of the Nicaraguan type. The method of representing the hands and arms as well as their position on the body indicate stylistic affiliation, and, furthermore, similar subjects, among which should be mentioned crude figures with a plate or disk held on the belly, are represented all the way from Guatemala to Costa Rica. This, perhaps, is the germ of the idea which later developed into the reclining human figure type commonly called the Chac Mool,

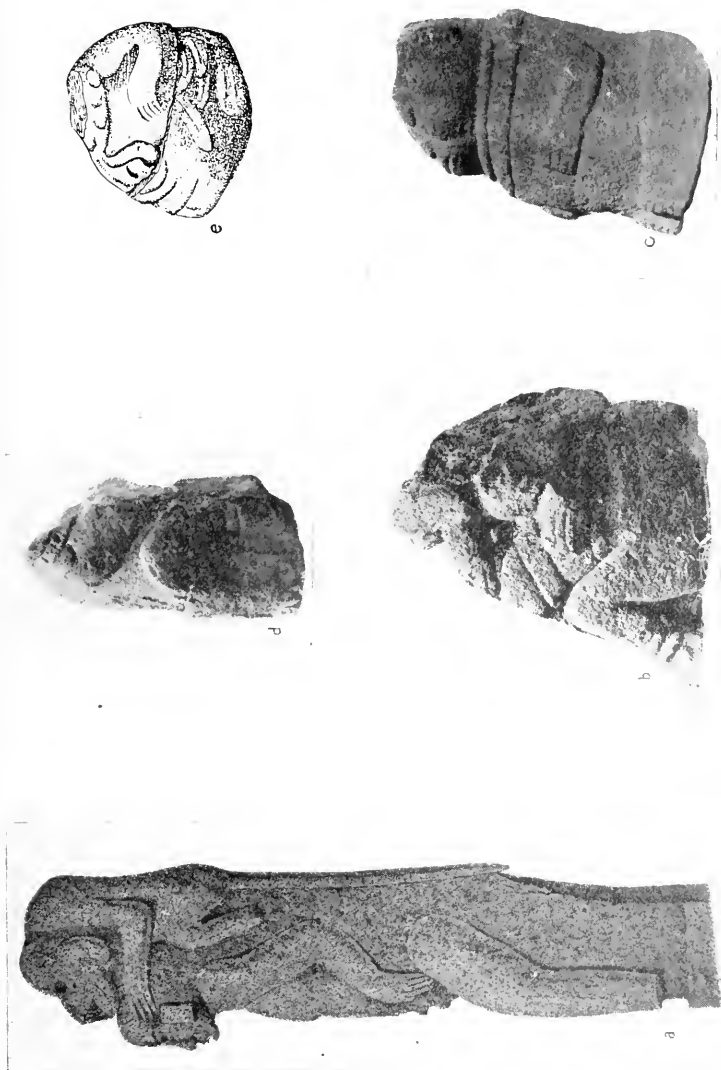


FIG. 79.—Sculptures of Nicaraguan type: (a) Standing figure, Zapatero Island, Nicaragua; (b) Seated figure from La Florida, about sixty miles from Copan, Honduras; (c) Crude sculpture from the highlands of Guatemala; (d, e) Statues of the Guatemalan sub-type from the ruins of Copan.

now proved to have been evolved as early as the Maya Great Period (sixth century A.D.) by its discovery by Prof. M. H. Saville at the ruins of Quirigua.

Two statues of the Guatemalan sub-type (fig. 70, d and e) have been found at the ruins of Copan, where they had been built into the foundations of stelae 5 and 4 which are dated 9.14.0.0.0 and 9.17.12.13.0 in the Mayan system or 452 and 523 A.D. From this we may safely infer that these two monuments, and indeed the whole group under discussion, are comparatively early, and that their makers occupied the Copan region before the arrival of the Maya.

The small jade figure known as the Tuxtla statuette (fig. 71, a) bears the date corresponding to 96 B.C. Mr. S. G. Morley, on the evidence of the glyphs themselves, believes that this date is contemporary. It is therefore the earliest date yet known on the American continent which is not of obviously legendary character. It has been recognized that the Tuxtla statuette did not accord stylistically with other Mayan remains of any period whatsoever. However, it can be connected with two large stone figures from the Nicaraguan area (fig. 71, b and c) and with certain jade pendants from the nearby peninsula of Nicoya. The distinguishing characteristic of the Tuxtla statuette is the appendage which covers the mouth, which may be a beard but more probably represents the bill of a bird. The two Nicaraguan statues here represented are marked by the presence of objects on the lower part of the face which I feel confident are intended to represent the bill of a bird, for when we examine the jade pendants from Nicoya (fig. 72) we find forms almost identical with those of the statues, the evolution of which into bird types can be definitely traced. It is also of interest to note that in the Nicoya jades we can trace the transformation of this bird type into forms which are well known in South America in the early Peruvian cultures.

The question who made these statues now arises. On artistic grounds our search can at once be limited to three peoples, the Maya, Nahua, and Chorotega, and I believe that they may be definitely ascribed to the Chorotega for the following reasons:

I. The majority of the statues are in territory not known to have been occupied by anybody but Chorotega, while all the statues occur within the extreme limits of this stock, i.e. between the State of Chiapas in Mexico and northwestern Costa Rica.



FIG. 71.—The Tuxtla statuette (a) compared with two large stone figures from the Nicaraguan area (b, c).

II. We may eliminate the Maya, because it is certain that they never came to Costa Rica and Nicaragua. From archaeological remains it seems that Maya art once dominated Salvador, and certain Mayan motives appear on Costa Rican and Nicaraguan pottery, but, in the words of Dr. Spinden, these designs are "carried so far from the original that only an expert can see the connections."

III. The Nahua came to Nicaragua at a comparatively late period—probably in the early part of the fifteenth century—and surely never occupied more territory than at the time of the conquest. They certainly did not settle near La Florida and in the Uloa Valley, so they could not well have been the makers of the statues.

IV. While the statues are not Maya or Mexican in style, yet they are related to ceramic and jade remains from Nicaragua and Costa Rica which are universally ascribed to the Chorotega.

A word must now be said about the Chorotega. At the time of the Spanish conquest they were divided into four geographical groups consisting of: (1) the Chiapanecs in Chiapas, or southwestern Mexico, (2) the Choluteca in the Honduran Department of Choluteca, (3) the Mangue in the region between Leon, Managua, and the Pacific in Nicaragua, and (4) the Orotiñans in northwestern Costa Rica. Their language bears relationship to that of no other people, although at one time Brinton thought that it might be a branch of the Aymara tongue of Peru. The Chiapanec possessed a legend that they had come from Nicaragua, while all the Spanish historians of Nicaragua agree that the Chorotega were the "ancient and indigenous" inhabitants of that land.

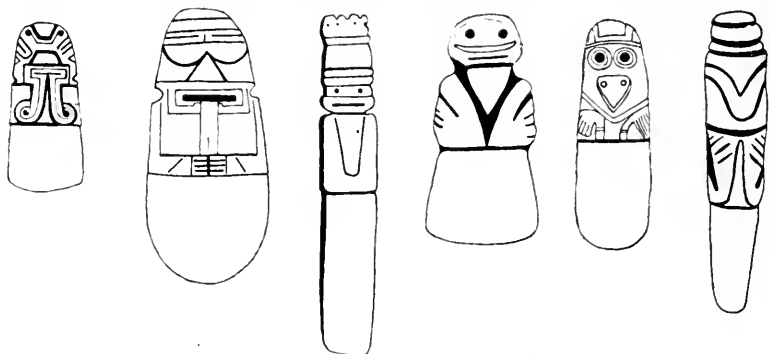


FIG. 72.—Jade pendants from Nicoya.

With this information before us, we are now prepared to advance certain hypotheses as to the movements of population in Middle America:

I. The Chorotega, who on archaeological grounds show relationship with South America, probably moved from that continent into Central America in very early times. Archaeological remains show that they occupied, at one time or another, the highlands of Chiapas and Guatemala, the eastern and northern portions of Honduras, the central and western parts of Nicaragua, and the northwestern corner of Costa Rica.

II. The Maya, who probably came originally from the district to the south of Vera Cruz, in the centuries immediately preceding the Christian era occupied the region of the Peten in northern

Guatemala. At the beginning of the first century A.D. they expanded to the southeast, and settled in the Copan-Quirigua-Uloa Valley region, driving out the previous inhabitants, who were Chorotega.

III. In the sixth and seventh centuries A.D. the Maya civilization was uprooted, probably through the failure of agriculture, and the population moved into Yucatan and the highlands of Guatemala. In the latter region they again encountered and drove out Chorotegan tribes, of which the remnants today are the Chiapanecs and Mazatecs.

IV. Various tribes of which we have not spoken, the Lenca, Xicaque, Ulva, etc., are almost certainly of South American origin and perhaps speak a South American language. They appear to have moved northward in the wake of the Chorotega, whom they drove out of Honduras and central Nicaragua.

V. A third migratory wave from South America consisted of such Chibchan tribes as the Corobici, Guetar, and Talamanca. At the time of the Spanish conquest the Corobici and Guetar had come into contact with the Chorotega of Costa Rica, and were rapidly exterminating them.

VI. Nahua tribes started to work down the west coast of Central America in comparatively early times, yet no group of this people passed the Lempa River in Salvador until the beginning of the fifteenth century. At that time, however, the Nicaraos entered Nicaragua and displaced the Chorotegan tribes occupying the Isthmus of Rivas, the narrow strip of land which separates the Lake of Nicaragua from the Pacific.

The hypotheses which have been advanced above rest on a complex of facts, for which as yet no other explanation has been offered. The outstanding features to which attention is invited are: (1) that stone figures of several distinct types distributed from southern Mexico to Costa Rica apparently form a unified group; (2) that this group, in part at least, is very early, as is shown by the presence of these statues under the Copan altars and by their artistic connection with the Tuxtla Statuette; and (3) that one and only one race, the Chorotega, has ever occupied the full and exact limits of the region wherein these statues occur.

THE CEREMONIAL SOCIETIES OF THE QUILEUTE INDIANS¹

BY LEO J. FRACHTENBERG

INTRODUCTORY

PROBABLY the most important (and complicated) feature in the social life of the tribes of the North Pacific coast, in addition to the potlatch, are the winter ceremonials (ritual dances, secret societies) which have thus far been observed to exist among the Tlingit, Haida, Tsimshian, Bella-Coola, Kwakiutl, Nootka, Comox, Pentlatch, Sanitch, Lkuñgen, Clallam, and Quileute Indians. These ceremonials consist of a series of dances, held during the winter months, and rendered at the initiation ceremonies of novitiates into the secret societies which are the owners and keepers of these dances. They have attained their fullest development among the Kwakiutl Indians, undoubtedly because of the intricate totemic organization of this tribe. Whether these ceremonials originated with the Kwakiutl Indians and were spread by them among the other neighboring tribes, is a question which will, perhaps, never be solved. As was pointed out by Boas,² all ceremonials were in the main derived from one source, namely from the Kwakiutl Indians. But,

it does not necessarily follow that no secret societies existed [among the other tribes] before the Kwakiutl exerted their influence over the people of the [North Pacific] coast.

However, the fact remains that wherever these ceremonials have been met with, their main features and even nomenclature were patently Kwakiutl; moreover, in a number of instances, the participants were able to point out that certain features were introduced within recent times from sources which ultimately go back to the

¹ Published with the permission of the Smithsonian Institution.

² Franz Boas, "The Kwakiutl Indians," in *Report of U. S. National Museum for 1895* (Washington, 1897), p. 661.

original Kwakiutl source. In other words, while most of the tribes of the North Pacific coast may have had secret societies and attending rituals of their own, they borrowed the main features of the winter ceremonials either directly or indirectly from the Kwakiutl, each tribe adapting and developing them in accordance with the peculiarities of its social organization and with the original elements of its own existing societies.

This process of acculturation is perhaps best shown in the development of the ceremonial societies of the Quileute Indians. It is not within the scope of this paper to treat the Quileute ceremonial societies in their relation to the corresponding Kwakiutl ceremonies. This will be done systematically and extensively in a paper dealing with the general problem of Quileute ethnology. The object of this article is to give a brief description of the main features of the Quileute ceremonial societies and rituals and to call attention to those elements which have not been found in the societies of the other tribes and which must be looked upon as distinctively Quileute in origin.

THE QUILEUTE CEREMONIAL SOCIETIES

The Quileute Indians observed the following rituals,¹ based upon the principle of ceremonial societies:

1. The Tlokwalí or Wolf Ritual (*Lō'kwali*). This society, as the mere name implies, is of Kwakiutl origin, having been introduced among the Quileute within comparatively recent years through their contact with the Makah (Nootka) Indians of Neah Bay. It has the largest membership and constitutes the so-called Warrior Society among the Quileutes.

2. The Tsayeq or Fish Ritual (*ts'ā'yeq*), also of Kwakiutl origin, introduced within recent times through the medium of the Makah Indians.² In point of membership it ranks next to the Tlokwalí and its membership is primarily made up of fishermen and seal-hunters.

¹ The terms "ritual," "ceremonial society," "initiation-ceremony" are so closely interwoven as practically to form synonyms.

² The Kwakiutl term *ts'ēts'aēqa* (singular *ts'a'ēqa*) means "secrets" and is used to denote "the period of the winter ceremonial" and also the ceremonial itself. See Boas, *op. cit.*, p. 418.

3. The Hunting Ritual of the Hunter Society (*qē'Lla'akwāl* "going up the river") is next in importance. This is the only original Quileute society, and, as will be pointed out later on, served as a model in the adaptation of all other ceremonial societies introduced through the influence of the neighboring tribes. Primarily only hunters could become members of this society.

4. The Ritual of the Whale-Hunters' Society (*sibā'xulāyo'* "singing for the grease") is a whaling ceremonial recently adopted by the Quileute from the Makah Indians. The adoption took place some seventy years ago simultaneously with the introduction of whale-hunting. Only actual whale-hunters were entitled to membership in this society whose list was very small, owing to the fact that a limited number of Quileute Indians practised whale-hunting.

5. The Ritual of the Weather Society (*talā'lāyo'* "singing from the south") is a recent introduction from the Quinault Indians. All songs of this society were rendered in the Quinault language, hence the term "singing from the south." Membership was restricted to those who had acquired a guardian-spirit enabling them "to change the weather."

Before proceeding to a detailed description of the rituals connected with each of these societies, it will be well to describe at first those elements (membership, duration, paraphernalia, etc.) that are common to all; deviations from the general scheme, wherever such occur, being pointed out during the description of that particular ceremonial which shows such distinctive features.

All rituals were held during the winter months and took place whenever a new member was initiated into a ceremonial society. Each ceremonial lasted (with the exception of the last one) six days, and one of its most prominent features was the distribution (on the last day) of presents on the part of the family of the novitiate among the other members of the society. This "potlatch" feature has assumed such importance among the Quileute Indians, that one is almost tempted to maintain that the ceremonial societies served the important purpose of facilitating the giving and receiving of presents. The amount of a present to be given to a

particular member was not based upon the social rank of the receiver but was predicated upon the number of ceremonials previously arranged by that person; that is to say, upon the number of members (in accordance with the number of children) which that person (head of the family) had in the society. Thus if a member of a given society had three children who were also members of that society, he received four presents (one for himself and one for each of his three children). Of course, presents received during those ceremonials were returnable either to the giver himself or to his descendants (or family). If the receiver died before he was able to pay this obligation, then his children (family) were charged with the duty of returning the same number of presents or even more gifts of greater value. Because of this potlatch feature, each head of a family, in order to insure future wealth to his children, strove to enroll them in as many societies as was possible—the novitiate in many cases being a mere infant. Membership into any of these societies was open to males and females.

Each society had two types of membership: (1) members whose affiliation was purchased for them by their fathers (or mothers), upon the arranging of a ceremonial, and (2) those who were initiated as members because they had obtained a guardian-spirit for that particular society. No social distinction, however, was made between these two types of membership, at least as far as the quantity or quality of the presents given to them was concerned although a linguistic distinction obtained between them, a guardian member being called *hē'ts'āq*, and a plain member *hēt'aya'slāqa'* "he is sung for." Each member of a society was called *tc'a'a*, "ripe" in contradistinction to the non-members who were called *xwēla'* "raw" and who could not participate in any of the ceremonials except as spectators, and who were not eligible to receive gifts. The initiation ceremonies varied somewhat in accordance with the two types of membership; that is to say, they were different for a *hēt'aya'slāqa'* (plain member) and for a *hē'ts'āq* (a member who had a guardian-spirit). These ceremonies will be described later on.

Each society had its distinct guardian-spirits, and the color applied to the facial painting and the headgear of the participants

(members) differed for each society. Only members who had guardian-spirits were entitled to wear the headgear and to display the ceremonial facial paintings that pertained to their society. The headgear consisted of head-rings made of shredded cedar bark dyed black or brown. These head-rings were different for each society. In the same way, each society had its special facial paintings, every member using a distinct form, in accordance with the instructions given him by his or her guardian-spirit. The drums that were used during the initiation ceremonials consisted, in former days, of cedar chests, square or oblong, and manipulated by the hands and feet of the drummer. More recently these cedar boxes were replaced by circular drums consisting of cedar hoops over which was stretched deer skin fastened to the hoop by means of wooden pegs. The rattles consisted of two pieces of wood hollowed out and filled with small pebbles and fastened together by means of wild cherry bark. The shape and coloring of these rattles varied for each society. Whistles were made of cedar and were similar to those used among the other tribes of this area.

Each initiation ceremony was presided over and in the hands of a set of officials whose position was semi-hereditary, dependent upon the fulfilling of certain obligations. Thus, a son assumed the official position of his father (or uncle) and a daughter that of her mother (or aunt) as soon as he or she gave a feast which was regarded as sufficient to justify the individual in question in assuming the prerogatives of his or her predecessor. Failure to comply with this custom constituted sufficient reason for the tribe to appoint to the vacancy a person outside of the family of the last incumbent. The names of these officials and their functions, in the order of their importance, were as follows:

1. The Fathers (*hēhē'bilists!* "starters"), two in number, held their office by virtue of having obtained a special guardian-spirit (*taxē'lit*) for it, but subject to the previously mentioned regulations. It was their duty to give all necessary signals during the ceremonial, to start all songs, and to cut up and divide the food among the guests. They sat near the fireplace, facing the door. This office was considered a high honor, but no special privileges were con-

nected with it, except that all the food left over from a ritual became the property of the Fathers.

2. The Firemen (*k!e'iya'q!wāyo'* "fire-owners"), also two in number, attended to the fire in the house in which the ceremonial was held. For this service they received some special gifts from the family of the novitiate.

3. The Door-keeper (*!lā'ti'pāta'q!wāyo'* "door-owner") stood guard at the door seeing to it that no outsider entered the house. He closed and opened the door at a signal given him by one of the Fathers. He also was rewarded at the conclusion of the ritual with a special present from the family of the novitiate.

4. The Water-carrier (*k!wā'ya'q!wāyo'* "water-owner") passed drinks to the participants whenever necessary. It was considered a bad breach of etiquette for any member to help himself to water without having first obtained permission from the Water-carrier. Whenever this happened, water was refused to all members until the Water-carrier had been appeased by the offender by some gift. A similar custom prevailed, whenever anyone helped himself to the food or threw a stick of wood into the fire without permission of the Fathers or Firemen. As soon as such an infraction of the rules occurred, the Door-keeper was informed of it and promptly closed the door and kept it shut until the fine was paid to the man against whose office the crime was committed.

5. The Face-painter (*ti'ē'li'ts'ilāt* "painter of faces") painted the faces of the members of the society. This office was always held by a woman. She sat near the entrance, on the left side of the house, and had before her large wooden dishes filled with paints. As each person was about to enter the house, she inquired his particular design, whereupon she proceeded to paint the face in accordance with the instructions given her.

Having discussed those elements of the rituals that are more or less common to all, we shall now proceed to describe the manner in which each ritual was held, beginning with the Tlokwalī; and inasmuch as the initiation ceremony varied in accordance with the two types of membership (see above) we shall first describe the initiation of a young child whose parents arranged for a ceremonial

in order to purchase for their offspring membership in the Tlokwalí society.

THE TLOKWALI (WOLF RITUAL)

Before announcing his decision to purchase for his child membership in the Tlokwalí Society, the head of the family ascertains first whether enough presents are available. For that purpose he holds a consultation with all members of that family who are related to it by blood. If the father of the intended novitiate does not possess enough wealth, the other members of the family aid him by contributing additional gifts. The next step is to ascertain how many gifts each member of the Tlokwalí is entitled to receive. This is done by calling into consultation the chief of the tribe and the heads of the most important families. Upon the completion of this task, two relatives of the prospective novitiate go around the village throwing handfuls of small pebbles on the roofs of the various houses. This serves as a warning to the inmates that a Tlokwalí is about to be held and to get themselves ready for it. Upon the return of the two messengers all male members of the family of the prospective novitiate betake themselves, in the evening, to the woods near the village or to the burial grounds, where for about an hour they imitate the cry of the wolf, or that of the horned owl (two of the most important guardian-spirits of the Tlokwalí Society).

On the next day two messengers, dressed in their Tlokwalí garments and painted accordingly (see below) go from house to house, carrying a rattle and a bundle of sticks, the latter representing the gifts to be received by each participant. The messengers do not sing; they merely shake their rattles. Upon entering each house, they pull out from the bundle a previously indicated number of sticks (each stick represents the value of one gift) and touching the head of the family with them, they whisper, "You are invited by So-and-so to a Tlokwalí tonight."

The Tlokwalí is always held in a special, commodious structure, belonging to the whole village and known as the Tlokwalí-house. In the evening of the same day in which the invitations are made the members begin to assemble. At first only the women and old men appear in the Tlokwalí-house. All other members of the

Tlokwali betake themselves first to the woods where they imitate the cries and actions of the wolf. After a while they proceed to the Tlokwali-house whistling, crying, and behaving themselves like wolves. Before entering the house, they walk around it shouting, pounding the walls with sticks, and throwing rocks at them. Finally they enter, led by two men who wear wolf masks and the ends of whose blankets are tied in such a way as to represent the tail of the wolf. The others carry salal-bushes on their shoulders and are provided with whistles of various sizes. All crawl in on their hands and feet (also in imitation of the wolf). Before the actual entrance of the "Wolves," those inside the house begin to sing, or rather recite:

Qwayā: tūkwiśwāi, qwayā: tūkwiśwāi, qwayā: tūkwiśwāi, hūūūū.

When the singers reach the word *hūūūū*, the Doorkeeper throws the door open, whereupon the Wolves rush in, shouting, blowing their whistles, and shaking the salal-bushes. They walk to the right until they reach the northeast corner of the house, where they stop. Upon a signal from the Fathers they stop making noises and throw themselves in a pile, one on top of the other. After a few minutes the Fathers again begin the recitation of the previous song which is soon taken up by the whole assembly. This serves as a signal for the Wolves to get up. They arise and rush out of the house in the same manner in which they entered it.

Outdoors the Wolves discard their masks, whistles, and salal-bushes and, dressed in their everyday garments, they dance into the house. Here they seat themselves, wherever they please, regardless of social rank. The women usually sit on one side of the house, while the men occupy the other side. After all are seated, the singing commences. The songs rendered on these occasions are always Tlokwali songs, that is to say songs which pertain to this ceremonial. These songs may be either inherited or received from the guardian-spirit. The first songs rendered are those by the Fathers; then the first member seated in the southwest corner of the house recites his song; he is followed by the individual sitting next to him, and so on until the last woman in the northwest corner is reached. Very young children and slaves are passed up.

Each song is rendered by two people and is accompanied by the shaking of the ceremonial rattles (held by the singers in their right hands) and by the beating of the drums. The singers usually start the song and are soon joined by the whole assembly. Upon the completion of the song the singers pass the rattles to the next pair, and so on until they come back to the Fathers in whose charge they remain throughout the ceremonial. The drums are the property of the whole tribe and are always kept in the Tlokwalihouse. Those who manipulate them are given small presents by the family of the novitiate. The rattles are made of vine-maple and are shaped like a raven; they are painted black, except the breast, bill, and eyes, which are painted red. The rattles are made and owned by those members who have the raven as their guardian-spirit.

As soon as the singing is over, the Fathers take the novitiate between them and lead him once around the fire, starting from the right and going to the left. As they walk thus, the Fathers shout, whistle, throw up sticks of fire, tear mats,¹ etc., while the other members of the society beat their feet against the floor or benches. Upon arriving at the left side of the house, the procession stops. The Fathers begin a song which is followed by a general dance of short duration. After the dance the child is taken back to its mother. If the novitiate is too young to walk, the mother carries him on her back while she is being led around the house by the Fathers. This ceremony is called *lā'q!alē'l* "going to drive out," and it takes place whenever a novitiate desires to purchase membership in the Tlokwali society. Its apparent purpose is to visualize the prospective member to all other members. After this ceremony is over, the Firemen add more fuel to the fire, whereupon food is distributed among those present. This is done by the Fathers who, should the occasion demand it, may choose some assistants. This ends the ritual for the first night.

On the morning of the second day the messengers invite the people again, without, however, throwing pebbles on the roofs of

¹ These "bad actions" of the Fathers correspond completely to the acts committed by the members of the *nōlēmāl* (Kwakiutl) or *sā'nēk* (Nootka) societies. See Boas *op. cit.*, p. 468.

the houses. Nor do they take the bundles of sticks along, as is done on the first day. In the evening all members assemble at the Tlokwalí-house. The spectacular entrance of the Wolves is omitted. As the members come in, their faces are painted by the Face-painter. The following are the most prevalent designs: the whole face painted black; the left side black and the right side white, or vice versa; both sides of the face black with a white stripe in the middle, from the center of the forehead to the point of the chin; the upper part of the face black and the lower half red. These four designs are used only*by the so-called "spirit-men" (*hē'ts/āq*); that is to say, by those who have a Tlokwalí guardian-spirit. All other members have only black finger-marks on their cheeks. The Face-painter performs the duties of her office on the second and each subsequent night. On the first night each member paints his own face before starting for the ceremonial house.

As soon as the painting ceremony is over, the members seat themselves, whereupon the singing is started by the Fathers. From now on the ceremony takes exactly the same course as on the first night, and is likewise concluded with a general feast. The same rules are observed during the third and fourth nights.

On the fifth night the members, after having undergone the usual painting ceremony, take their accustomed seats. On that night the novitiate is represented by a woman (*tci'ā'tīlāt* "protector of people") chosen and rewarded by the novitiate's family. (The reasons for this substitution will appear later on.) She is seated on a mat placed in the back of the house opposite the door and is accompanied by five or six other women and by the man (or woman) who gave the Tlokwalí. In front of them, at a distance of about fifteen feet, is placed a platter filled with dried black salmon which has been boiled, mashed, and mixed with whale-oil on the same morning. In front of this platter and facing the people on the mat, is seated a powerful medicine-man; he, in turn, is faced by two shamans of lesser prowess who sit behind the platter with their backs turned to the people on the mat and who serve as his assistants during the coming ceremony. This ceremony is called *ālitsē'licēl* "going to feed him" and takes place in order to give

the Tlokwaligiver an opportunity to partake of some food. According to custom, the Tlokwaligiver must abstain from any food (*sic!*) for five days. He can eat only after he has tasted of the boiled and dried black salmon.

As soon as everything is ready for the feeding ceremony, the leading shaman begins his magic song in which he extols the prowess of his guardian-spirit. As he sings, the women on the mat register by various motions excessive hunger, while the other members stamp their feet against the floor and benches and make all sorts of noises. Then the shaman, still singing, takes a handful of the food from the platter and shows it to the people. Then he applies his magic power to it, spitting on his hands and rolling the food between his palms until, by a legerdemain trick, the food disappears. Thereupon he throws the (invisible) food to one of his assistants who "catches" it and passes it to the third shaman. This process is repeated several times. At last the first assistant takes the food to one of the women on the mat, puts it into her mouth, and, by motions with his hand, shows how he brings it down to her stomach. As soon as the woman has "swallowed" the food, she faints, whereupon the other occupants of the mat are fed in the same way. Then the shaman stops singing, and the occupants of the mat are covered with a blanket. Thereupon the Fathers make preparations for the *lā'q'alē'l* ("going to drive it") ceremony whose sole aim is to wake the women up. The Fathers start a certain song and, as the song progresses, the women are seen to tremble, and gradually they roll over and raise themselves on their hands. Thereupon a man called *k'ī'ē'lat* ties a rope around the waist of each kneeling woman. The women rise and, led by the *k'ī'ē'lat*, walk around the fire, shouting, picking up various objects from the ground and throwing them high into the air, while the other members stand up shouting and yelling. The women are led around the fire once. Upon arriving at the starting point, the ropes are taken off them, and all the participants of the *lā'q'alē'l* ceremony go back to their seats. Then one of the Fathers intones his hereditary dance song. This is the signal for all members to commence dancing. The dancers hardly leave their places. They

merely raise their feet alternately, stamping them against the ground, and swing their arms up and down. During the dancing every member of the Tlokwalí renders his special dance song inherited by him from his father or mother and owned by his family. After the song of the last member has been rendered, the thirsty members drink from the bucket which is carried around by the Water-carrier. After this, food is served, and this concludes the ritual for the fifth night. Before their departure the members are addressed by some very old man thus: "Tomorrow morning all of you must arise early. Bathe, but do not eat! Repair at once to the Tlokwalí-house. Those who do not wish actually to participate in the Tlokwalí dance will go to the house directly; the others will assemble outside."

On the morning of the sixth and last day the old men, women, and children who do not dance the real Tlokwalí dance go directly to the Tlokwalí-house where they are painted, as on the previous nights, by the Face-painter. All other members assemble in front of the house, where a large fire has been kindled. Around this fire they dress themselves for the ceremony to come. All preparations must be made around a fire, as otherwise the participants would die. The dancers (*L'ōk"!ē'galē'l* "about to obtain a guardian-spirit from the woods") paint their faces according to the designs owned by them. The entire body is covered with red ochre. On their heads and shoulders they place the appropriate Tlokwalí head-bands and shoulder-rings, made of shredded cedar bark. These ornaments are painted either entirely black or red, or partly black and partly red, or not colored at all. The men wear short blankets around their groins, while the women wear skirts made of shredded cedar bark. All wear their hair tied in a knot in front over the forehead. Each dancer sticks into his body pins made of elk- or bear-bone, about eight inches long and a quarter of an inch thick, sharpened at one end and decorated at the other end with human hair or strands of shredded cedar bark. Some use arrows, knives, and seal-harpoons for that purpose. These are stuck into the skin of the back, forearm, calves, and thighs of the legs, or through the upper lip. The knives, arrows, and harpoons are owned

by those who use them; the pins are the guardian-spirits of certain individuals, and must be returned to them at the close of the ceremony.¹ According to information given me, these lacerations were by no means painful and special care was taken that no blood vessel should be pierced. Upon extracting these instruments of torture the wounded spot is merely rubbed and blown upon.

As soon as the dancers have finished their preparations, the Fathers who are inside the house begin to sing. Thereupon the dancers, walking singly, enter the house, imitating the actions of the wolf and whistling, throwing sticks and stones at the guests, and tearing up anything that comes into their hands. All non-dancing members beat their feet against the floor or benches. The house is dark, there is no fire in it, and the skylights are down. As soon as all dancers are inside, the skylights are raised. Then all members of the Tlokwalí begin to dance, singing the dance songs which belong to their families. After all the songs have been exhausted, the fire is kindled, and the Tlokwalí dancers return the pins, etc., to their rightful owners. Preparations are then begun to serve food to the assembled guests. While the food is being cooked, the person who gave the Tlokwalí distributes the presents among the members. The food is then served, and this ends the Tlokwalí ritual in honor of a plain member.

The Tlokwalí ritual for a full member is the same as the corresponding hunting ritual, except that the arrangements of the house, dances, etc., are identical with the arrangements during the initiation of a plain member (as below).

THE HUNTING SOCIETY (HUNTING RITUAL)

This society, as has been stated before, is the only native Quileute ceremonial organization, and its ritual has served as a basis for all other rituals. The members of this society were divided into two categories, those having a guardian-spirit (*qēl'a'ak-*

¹ The self-inflicted tortures of these dancers may be compared to similar acts performed by the *hāwī'nalal* (Kwakiutl) and *hī'ltaq* (Nootka) dancers. Within more recent years the Quileute dancers were wont to inflict upon themselves the most gruesome lacerations, with the result that the Government stepped in and forbade the holding of the Tlokwalí ceremonial.

wā'lt/ēqa') and plain members (*tc!a'a* "ripe"). Its guardian spirits were: Elk, Night Owl, Horned Owl, White Owl, Deer, Bow, Arrow, Tā'bale (a two-headed dog), etc. The color applied to the rattles, facial painting, etc., of the members of this society was dark brown. Membership was restricted, and, for that reason, the ceremony was held in any common house large enough to accommodate all members.

The duration and type of the initiation ceremony varied in accordance with the manner in which a membership was obtained. The initiation of a plain member, that is to say of one who either purchased membership by merely arranging for the ceremonial and its attendant feasts and gifts or in whose behalf membership was purchased by the family, lasted two days. The initiation of a *qēL!a'akwā'lt/ēqa'*, that is to say, of one who had obtained a *qēL!a'akwāl* guardian-spirit, lasted six days. We shall first describe the ceremonial connected with the initiation of a novitiate who had obtained a guardian-spirit.

As soon as a man (or woman) receives a hunter's guardian-spirit, he becomes sick. A shaman is consulted who, by the color, ascertains the kind of sickness. The color being dark brown, the shaman declares the patient to have been rendered sick by a guardian-spirit of the *qēL!a'akwāl* (the Hunting Society). Thereupon a messenger is sent to all other members of this society inviting them to come to the house of the patient and to lend their assistance in curing him. The members arrive in the evening, wearing the appropriate head-rings, and their faces are painted by the Face-painter. The full members are painted in accordance with the instructions received from their guardian-spirits. Following are the most common designs: the whole face dark brown; the upper part brown and the lower white; the upper half brown with vertical red stripes (the red lines represent showers) and the lower half white; the whole face red (representing blood) with white stripes on both cheeks (these stripes represent showers). Plain members have only dark brown dots painted on their cheeks.

When the members are assembled, the novitiate (*hē'ts'ā:q* "he is sung for") lies on a mat and is covered with blankets. The mat

is placed between two fireplaces in which fires are burning. In ancient times any one could attend to the fire; in more recent years this function became the sole privilege of the Fire-keeper. At the head of the novitiate is placed a wooden or cedar bark representation of his guardian-spirit; while on both sides of him sit two women called *qwa'yē'l* ("cheeks") and chosen because of their powerful guardian-spirits. These women receive substantial presents for their services, and they serve as transmitters between the novitiate and the assembled members. The novitiate, as has been stated before, is sick "from his guardian-spirit"; hence, he can not talk nor sing loud. These two women sitting near him listen to his songs and repeat them in loud tones. In front of the fireplaces is a long bench on which sit all those members of the order who have a guardian-spirit; a similar bench is placed behind the mat of the novitiate, and this is occupied by the female members who have acquired the *qēL'a'akwāl* guardian-spirit; plain members occupy the side benches, and spectators, whenever such are admitted, are seated on benches near the entrance.

As soon as all are seated, the first two male (and full) members of the order, each having a ceremonial rattle in his hand, begin their hunting-song. They are followed by the next pair and so on until all members who own *qēL'a'akwāl* songs have rendered them. Then the female members of the order render their songs, and are followed in turn by the plain members. The two *qwa'yē'l* women, sitting on both sides of the novitiate, sing last. Only one drum is used during this ritual. After all songs have been rendered, preparations are made for the *lā'q'alē'l* ceremony. Its purpose is to "wake up" the novitiate. All full members, male and female, arise, and the first two members (male) at the left end of the bench take up the rattles and repeat their previous song. While they sing, the novitiate begins to tremble and, turning over, lifts his right hand and with his index finger points towards the ceiling, thereby indicating a desire to be "taken up to the mountains" where he had obtained his guardian-spirit.¹ (If the novitiate does

¹ If the novitiate received a guardian-spirit "from the woods or river," he does not point at the "hills" but, supported by the two women, crawls around the fireplace.

not raise his finger, the ceremony which follows is omitted.) After having raised his finger, the novitiate relapses into unconsciousness, and the two women cover him with the blankets.¹ Thereupon the members of the society begin to dance, employing the songs owned by their respective families. The order in which these songs and dances are rendered is the same as during the Tlokwali (see above). Each member holds in his hand a short stick, about four feet long and painted dark brown (a color obtained by mixing black with red ochre). These canes are used, because the hunters, on their expeditions, always carry sticks. During these dances the actions of hunters and various game animals are imitated. After the dance food is served by the family of the novitiate, and thus ends the ritual for the first night.

On the next day, early in the morning, the young male members of the order come to the house of the novitiate and build a large platform over the mat occupied by the novitiate. In the evening all members assemble, sing, and perform the waking up ceremony, as on the first night. This time the ceremony is successful, for as the singing continues the novitiate turns over on his right side and, attended by the two women, crawls (on his back) around the fire, going from right to left. Upon arriving midway between the two fireplaces, he jumps up on the platform.² He is soon joined by all those members of the order, male and female, who have obtained a guardian-spirit "from the hills."³ This action on the part of these members represents their journey to the hills, the land of their guardian-spirits. They take along a drum, and each member sings his particular ceremonial song. All lie on their backs (except the two *qwa'yē'l* women who attend to the novitiate) with their feet hanging down and gradually move farther up into the platform. Inasmuch as the journey is supposed to be a hard one,

¹ The women stay with him day and night.

² Inasmuch as the novitiate is supposed to be sick, he does not jump of his own volition; he is lifted up by his guardian-spirit.

³ If the novitiate has a guardian-spirit "from the river or woods," this ceremony, which represents the journey of the members to the land of their guardian-spirits, is omitted. The novitiate crawls instead around the fire, increasing each night the distance traversed, while the other members having similar guardian-spirits stand up, shake or swing their arms, and shout.

the distance traveled on this night is not more than about six feet. Every now and then one of the "travelers" will say, "It is hardly foggy enough in the mountains." Thereupon those members who remained below would throw mats, rags, etc., into the fire, causing it to smoke. Occasionally a plain member would shout at the *qwa'yē'l* women, "How are you folks up there?" And the answer would come back, "We are just beginning our homeward journey." Gradually the travelers turn around and, still crawling on their backs, come to the edge of the platform, until their heads touch the same and their hair hangs down. Then they turn around once more and sit up with their feet hanging down. Thereupon they begin to shake their heads to and fro, while those below beat their canes against the floor and shout. Suddenly they slip down and, as each man and woman comes down, those below seize and hold them by their waists. The travelers stretch out their arms, whereupon some of the plain members throw to them dried salmon or large slices of elk and deer meat, which they in turn throw back to the plain members. The meat or salmon not caught on the first throw is permitted to lie on the ground and is removed later on. This ceremony is called *hayā'walwaxat* ("throwing to one another") and the only explanation given for it was that "the people who have such guardian-spirits play in this manner." Upon its termination the usual songs and dances are rendered. The travelers, still weak and weary from their long journey, participate in the dancing, but are supported by the plain members. After the dancing is over, the travelers are released, and all seat themselves. The food employed in the throwing ceremony is then served, and the ritual for the second night comes to an end.

During the third and fourth nights the ritual follows the same course as on the second night with the exception, however, that on each of these nights the travelers traverse a greater distance and stay away for a longer period.

On the fifth night only a limited number of ceremonial songs are rendered. These are followed by the *ālitsi'dicē'l* ceremony ("giving the food"). The significance and phases of this ceremony are the same as those of a similar ceremony performed during the

Tlokwalí and need not be described here (see above, p. 329). After this ceremony is over, the first two (male) full members sitting on the right end of the bench stand up, and while the other members of the order shake, sing, and produce various sounds, the unconscious novitiate and his companions roll over and begin to crawl until they reach a place situated between the two fireplaces. There they are seized by some of the other members, stood up, and held by their waists, while they repeat the throwing ceremony described above (see p. 336). At the end of this ceremony all begin to dance. When the dancing is over, the novitiate sings, in a loud voice, the song given him by his newly acquired guardian-spirit and follows it up with a similar dance, at the conclusion of which the members resume their seats and the novitiate returns to his mat. While food is being prepared for the assembled members, the young girls and boys (children of some members of the order and admitted as spectators) render some dances during which they imitate the actions of a stalked elk. Some of the dancers dance in an erect position, others stoop down, while still others dance on their knees. Occasionally, an aged spectator will join the dancing "elks," acting as if he were hunting them. This aged man (or woman) usually belongs to what might be called "the begging fraternity" and he uses this dance as an opportunity for begging. He will point at some rich man or woman, while dancing, and the individuals thus selected reward him with a small gift. As soon as the food is ready, it is served. After having partaken of the food the members go home, but before they depart they are invited by some old man to assemble on the next morning. The invitation is usually couched in the following words: "Arise ye early in the morning. We will emerge from the woods."

On the morning of the sixth day the platform and the bench in front of the two fireplaces (on which the male full members of the order have been sitting) are removed. Outside the house a big fire is built around which assemble all full (but young) members and dress themselves for the coming ceremonial dance. The old men, women, and plain members go directly into the house. The full members put on the head-rings of the order, and paint their

faces according to the respective designs owned by them. Upon a signal from the leaders (the Fathers) they enter the house crawling on their knees and acting like elks. Inside, they stand up and dance their ceremonial dances. While dancing they lock their arms and extend the same, thereby denoting that they are looking for food. Thereupon the plain members throw to them salmon, salmon-eggs, berries, bags of oil, etc. This food is thrown back to the owners. After this throwing ceremony some more dances are executed. Then all members go to their seats, and the young boys and girls perform again the dance of the elks. During this performance the presents given away by the novitiate are distributed, after which food is served. This concludes the ritual of the *qē'l!a'akwāl* or Hunting Society.

In the evening of the same day the novitiate and the two *qwa'yē'l* women visit the houses of the several members and beg for food. This food is given away at a feast held the next day. If the feast does not take place, the food is divided among the several members of the order. No explanation for this custom could be obtained; it is probable, however, that it represents the appreciation by the individual members of the food eaten at the expense of the novitiate.

Originally the Hunting Society did not have any distinct officers. But with the introduction of the Tlokwalī similar officials were instituted during the Hunting ritual. Thus, the Hunting Society came to have, in addition to the Face-painter, two Fathers, a Fire-keeper, and a Water-carrier.

A special degree of relationship seems to have existed between the members of the Hunting Society and those of the Whaling Society (see below). Thus, all whaling men were invited to and participated in the Hunting ritual, and vice versa. The two ceremonials were closely related, and the members of these two societies applied to one another the reciprocal term *kēti'q!wāyi'ts!ilāt* "staying on one side of the mountain." This close affiliation between the two societies may, perhaps, be due to the fact that, according to a general belief, the guardian-spirits of these societies dwell in close proximity. The guardians of the Hunting Society live on the eastern slopes of the mountains while those of the

Whaling Society dwell on the western slopes. Furthermore, these guardian-spirits can understand one another perfectly well. Consequently the whaling men, participating in a Hunting ritual, are assigned to special seats and, during every throwing ceremony, they first throw the food to the novitiate and his associates. In return the whaling members invite the hunters to their ritual, and the latter perform the same functions. The songs rendered by these, as it were, ex-officio members are those of their own fraternity.

The initiation of a new member (child or wife) through purchase lasts only two or three days, according to the amount of food at the disposal of the prospective novitiate's parents (or husband). On the evening of the day set for the initiation ceremony the members of the society appear at the designated house and are painted by the Face-painter. They sing and dance in the usual fashion and leave right after the food has been served. The same performance takes place on the second night. On the third morning they assemble at a different house. After painting their faces and putting on the proper headgear they dance into the house of the novitiate. Upon the completion of the dance, presents and food are distributed among them by the parents or husband of the novitiate, and this completes the ritual.

In very recent years the members of the Hunting Society who danced into the house of the novitiate carried bags of peanuts which they threw all over the floor. These peanuts represented the excrement of the elk and were picked up and eaten by those members who did not participate in the dance.

THE TSAYEQ (FISHING RITUAL)

Membership in this society, as in the two previous orders, could be obtained either by acquiring a special guardian-spirit or through purchase. A person acquiring such a guardian-spirit became a good fisherman, seal-hunter, canoe-maker, and (in the case of a woman) basket-maker. Hence membership was confined to such persons as followed these occupations. The most important guardian-spirits of the Tsayeq were the Seal, Spear, Canoe, Land-Otter, Salmon, Kingfisher, and Sawbill. The color of this order

was red. The rattles used during the Tsayeq ceremonial were made of vine-maple and were painted red or red with white stripes. These rattles were of a special shape. The drums were the same as those used during the other ceremonials. Special head-rings, made of shredded cedar bark and dyed red, were worn only by members who had acquired a guardian-spirit. Such members displayed facial paintings of distinct designs suggested to them by their guardian-spirits. Three such designs were described to me as follows: the lower part of the face red with three perpendicular stripes on each cheek (representing three men in a canoe); the same design but with only one perpendicular stripe on each cheek; the whole face red with a wide white stripe in the center. Common members painted red dots or stripes on their cheeks. Originally only two Fathers and a Face-painter had charge of this ritual, but in recent years the offices of Firemen and Water-carrier were added. We shall describe first the initiation ritual of a new member who had received a guardian-spirit belonging to the Tsayeq Society.

As soon as the guardian-spirit enters the body of the prospective member he becomes sick. A shaman is called in who, noticing the color of the sickness to be red, declares the patient to be sick "from a Tsayeq guardian-spirit." The patient imparts this information to his relatives who decide, on the same night, to initiate him into this society.¹

Messengers are sent to all members of the Tsayeq Society with instructions to assemble the next day in the house of the novitiate. They come, and their faces are painted by the Face-painter who holds this office only during the Tsayeq ritual. After all are seated the members, led by the two Fathers, begin to sing their Tsayeq songs. Then the Fathers begin to wake up the novitiate who, as during all other rituals, lies on a mat and is attended by two *qwa'yē'l* ("cheeks") women. As the Fathers walk up to the novitiate, they sing and dance. The other members are standing and swing their hands (with the palms open) from right to left, repeating the words *hōo'c hōo'c hōo'c* after each verse. A stick is

¹ Swan, who witnessed this ceremonial, was misled as to its character. He calls it a strictly healing ceremonial. See James G. Swan, *Indians of Cape Flattery*, *Smiths. Contr. to Knowl.*, vol. XVI, p. 73.

placed in the ground on the right side of the novitiate. This stick is supposed to have been put there by the guardian-spirit. As the song of the Fathers progresses, the novitiate moves and, crawling on his back, he goes a little way to the right. Soon he rises and, supported by one of the *qwa'yē'l* women, he dances, swinging his open palms from right to left and singing in a low voice the song given him by his guardian-spirit. This song is repeated in loud tones by the *qwa'yē'l* women, who assist the novitiate (*hē'ts!ā:g*) back to his mat. The ritual for this night is concluded with a general feast.

The ritual follows the same course on the second, third and fourth nights, excepting only that, during each night, the novitiate traverses a greater distance in crawling on his back around the fireplace.

On the fifth night the novitiate sits up and is ready to receive some food. The members enter as on the previous nights and are painted by the Face-painter. A platter of boiled black salmon is placed in the middle of the room, and in front of this platter, facing the novitiate, sits some exceptionally powerful shaman. Behind the platter are seated two other shamans of lesser prowess. Then the feeding-ceremony takes place which is identical with the similar ceremony during the Hunting ritual (see p. 329). The novitiate is joined by four or five other members who have guardian-spirits, and they are also fed. Upon receiving the food, they become unconscious and are "awakened" by the Fathers. While the Fathers sing, the novitiate and his companions arise and crawl clear around the fire. After they have returned to their starting point the novitiate reveals to his fellow-members the dance and song given him by his guardian-spirit, whereupon he goes back to his mat. Inasmuch as the novitiate has not yet regained his full strength he begins to sing a song called *walā'aywalā's* "pounding with the stick." While rendering this song, he puts his hand on the stick, which had been placed in the ground on the very first night by his guardian-spirit. Contact with this cane gradually gives him back his former strength. After the song is over, food is served, and the members leave the house. They are, however, invited by some old man to appear early on the next morning.

In the morning the full members and those that want to join them appear in front of the house and there, standing around a big fire, they paint their faces and put on the proper head-rings. The other members and the old men and children go directly into the house. The dancers, headed by the Fathers, enter the house, crawling on their knees and shaking their heads back and forth. No songs are sung; only yells are given forth, while those on the inside pound the floor with their sticks. As the dancers enter, the room is dark. After all are in the skylights are raised. Then all members begin to sing and dance, swinging their hands from right to left. At the end of each verse the women shout "*hōo'c hōo'c, hōo'c.*" After all dances have been rendered, the presents are distributed, food is served, and the ritual comes to an end.

The ritual arranged in order to purchase membership for a child or wife lasts only two days. The members appear as on the other occasion, and the ceremony consists mainly of songs and dances rendered by the individual members. Each day, upon the completion of the songs and dances, the novitiate (*hēt!aya'slāqa'* "he is sung for") led by a woman (*tcī'ā'tilāt* "protector of people") walks once around the fireplace, in order that the members may look upon him and come to know him. No presents are given during the shorter ritual.

THE WHALE-HUNTER SOCIETY (WHALING RITUAL)

This society was introduced among the Quileutes by the Makah Indians, and its ritual was modeled wholly after the native Hunting ceremonial with which it shares in common special features (see above, p. 332). The color of this society is the same as that of the Hunting order, but somewhat darker, and the full members of the Hunting Society were always present at the ceremonial of this order, and vice versa. This may have been due to the fact that the two orders had fewer members than any of the other societies, although the reason given by the Indians is quite different. Membership into this society was open only to those who had acquired a guardian-spirit, and could not be purchased as was the case in the other ceremonial societies. The reason for this exclusiveness given

to me was "that young children and women could not be expected to be good whale-hunters." Furthermore, this society was considered the best of all, and its members had a special standing in the social life of the Quileutes. Only whale-hunters could belong to it. Its special guardian-spirits were the Whale, a rope made of sinews, any of the whale-hunting implements, etc. The ritual lasted five nights, and only two Fathers and the Face-painter officiated. The drum used during the ritual was the same as that employed on all other occasions, but the rattles, two in number, had a distinct shape and were colored dark brown. The members wore special head-rings, made of shredded cedar bark and colored dark brown. The same color was applied to the facial paintings, and the following designs obtained most frequently: the whole face painted dark brown; the same but with white dots (this design belonged to such members as had a certain mythical being for their guardian-spirit); the same but with three slanting white stripes on either cheek; dark brown heavy circles around the eyes.

Inasmuch as this society had but few members, the arrangement of the house during an initiation ceremony was somewhat different. To begin with, there was only one fireplace. The benches were built clear against the walls, the members of the Whale-Hunter Society occupying those on the left side of the house and half of the benches in the back of the house. Members of the Hunting Society occupied the other half of the benches placed at the back part of the house. The benches to the right were reserved for such spectators as were admitted to witness the initiation ceremony.

As soon as the shaman ascertains that the proposed novitiate is sick "from a guardian-spirit belonging to the Whale-Hunter Society," messengers are sent to all members inviting them to participate in the initiation ritual. The novitiate lies on a mat placed in the corner of the house and is attended by two *qwa'yē'l* women. Behind the mat two posts are driven into the ground and over these is stretched a piece of rope, made of twisted and braided cedar limbs. This rope is used only in cases where the novitiate has obtained a rope for his guardian-spirit. As soon as the members

have been painted by the Face-painter, the invited members of the Hunting Society place in the middle of the room a dish full of whale-oil. Thereupon each member of the Whale-Hunter Society steps forth and, scooping up some of the oil in the palms of his hands, he either drinks it or rubs it over his face. This oil represents the water of the whaling guardian-spirit. This ceremony over, all sit down, whereupon the Fathers intone their family songs pertaining to this ceremonial. Each member renders his own song; the Hunting members sing the songs of their own society. After all songs have been rendered, the novitiate is "awakened," in exactly the same manner as is done during the Hunting ritual (see above, p. 334). As soon as he "wakes up," that is to say, as soon as he turns over and sits up, two members of the society lift him up on the rope. Seated there he spreads out his arms, thus expressing hunger. Thereupon one of the members of the Hunting Society throws to him some dried fish, meat, or a bag containing oil. The novitiate catches it and throws it back. This throwing ceremony is repeated several times and is followed by general dancing, during which the Whale-Hunters render the dancing songs of their order, while the Hunters employ the songs that pertain to their own ceremonial. The Whale-Hunters render their songs first, and these are followed by the songs and dances of the Hunting Society. When the dancing is over, the novitiate is helped down from the rope, whereupon he sings, in a weak voice, the song of his guardian-spirit. This song is repeated, in louder tones, by the two Cheek-women. At the conclusion of the song the members sit down and are served with food.

If the guardian-spirit of the novitiate is not a rope, the waking up ceremony varies somewhat. The novitiate is awakened and crawls sideways around the fire. Arriving at the starting point, he is made to stand up by some of the members and renders his song. The throwing ceremony is omitted. The sideways crawling represents the swimming of the whale.

The ceremony varies but little on the second, third, and fourth nights. On each of these nights the novitiate moves farther from one end of the rope to the other (in case his guardian-spirit is a rope) or else crawls more times around the fireplace.

On the fifth night the novitiate sits up and is joined by three or four other members of the society. First the feeding ceremony (see p. 329) takes place. After the novitiate and his associates become unconscious the Fathers wake them up in the same way as is done during the Hunting ceremonial. The novitiate and his associates arise and, on their sides, slide around the fireplace. Then they stand up and are supported by some other members of the order, while the remaining participants in the ceremonial wash their faces in or drink the oil placed in the oil dish by the members of the Hunting Society. After the last man has washed his face, the throwing ceremony takes place. During this ceremony the members of the Hunting Society throw dried salmon, meat, or bags of oil to the members of the Whale-Hunting order. At the conclusion of this ceremony the novitiate sings his song and demonstrates the dance given him by his newly acquired guardian-spirit. The guests are served with food and are asked, prior to their departure, to appear again early in the morning.

In the morning they assemble around a big fire, built outside of the house, and around this fire they paint their faces and put on their proper head-rings. The spectators and the members of the Hunting Society do not assemble around the outside fire, but go directly into the house which at first is darkened. The novitiate on this day joins his fellow members outside the house. Led by the two Fathers the novitiate and his fellow members enter the house, imitating the motion of the whale. This is accomplished by stooping down and raising the hands above the head and lowering them. All walk in sideways. As soon as the last man is inside the skylights are raised and the members of the Hunting Society pour some oil into a dish which is used by the members of the Whale-Hunter order either to wash their faces or for drinking purposes. This is followed by the throwing ceremony which, in turn, is followed by general dancing. The dancers jump up and down singing the following refrain: "When I go out to sea, my mouth opens and shuts." At the conclusion of the dancing, the members sit down and presents are set aside for them by the family of the novitiate. The ritual is concluded with a feast.

THE WEATHER SOCIETY

This society is of Quinault origin. The initiation ceremony, although based upon the ceremonial of the native Hunting Society, shows certain important and distinct features. It lasts five nights as do all other ceremonials. To become a member of this society one has to receive a weather guardian-spirit. Such a spirit enables its owner to change the weather and to bring a dead whale ashore. Non-initiates can be present at the ceremonial merely as spectators. The color of the society is light brown (tan), and the head-rings used by the members during the ceremonial are dyed in this color. The same color is applied to the facial painting which, however, does not show such a multiplicity of designs as obtains in other ceremonials. The faces are painted wholly brown or merely with brown dots or stripes. The only official of this ceremonial is the Face-painter. No rattles are used to accompany the songs and dances.

As soon as the shaman ascertains, by means of the color, that the patient is sick "from a guardian-spirit belonging to the Weather Society," the members of this society are invited to the house of the patient who becomes a novitiate. They file in singly and are painted by the Face-painter. The novitiate sits on a mat spread somewhere on the floor, while the members seat themselves on the benches. After all are seated the novitiate (*tcālā'lāyō'ts'it* "maker of the *tcālā'lāyō'*") renders the songs which he obtained from the newly acquired guardian-spirit. In turn the other members render their songs, following them up with the dances of this order. This concludes the ceremonial for the first night. No food is served.

On the second night each member brings some food for the guardian-spirit of the novitiate. This food is placed in some corner of the house, and each succeeding night more is added to it. After depositing the food, the members take their seats and go through the same ceremonies as on the first night.

The same ceremonies are repeated on the third, fourth, and fifth nights. On the morning of the sixth day the members and the novitiate go first to a different house where they put on the

appropriate head-rings and paint their faces. Then, led by the novitiate, they repair to the house where the ceremonial took place during the preceding nights. They file in singly, singing and dancing. The songs rendered during this ceremonial are meaningless, as far as the Quileutes are concerned. The words are Quinault, having been taken over with the main features of the society. Each member sings the song of his family. At the conclusion of the last song all sit down, and the novitiate distributes the gifts set aside for this occasion. Thereupon the food which was brought by the individual members on the previous nights as an offering to the guardian-spirit is served, and thus ends the ceremonial of the Weather Society.

CONCLUSION

The above descriptions of the main features of the Quileute ceremonial societies, while only sketchy, are sufficiently clear to give us a bird's-eye view of the several elements which enter into the composition of these societies. As has been stated in the introductory chapter, the internal evidence, the linguistic nomenclature, and other factors point strongly to the fact that, of the five Quileute ceremonial societies, four have been adopted from adjacent tribes (three from the Makah, one from the Quinault) and only one (the Hunting Society) is of native origin. On the other hand, the rituals of these societies, while adhering closely in the main to the corresponding rituals of the borrowed orders (as is particularly the case in the Wolf, Fishing, and Whaling rituals), have been made to agree, in their more detailed aspects, with the original ritual of the native society. The introduction among the Quileute Indians of the non-native societies has taken place within comparatively recent years and may have been due to one of the following three factors: the importation of slaves in large numbers from the north and south, the frequent intermarriages which took place between the Quileute, Makah, and Quinault Indians, or the frequent friendly visits which these three tribes interchanged from time to time.

The Tlokwalí and Tsayeq Societies are undoubtedly of Kwakiutl origin, but their rituals, as practised by the Quileutes, show vast divergences, which are due to the fact that they have been intro-

duced, not directly from the Kwakiutl, but through the medium of the Nootka, particularly the Makah Indians. A detailed investigation of the Makah societies and their rituals will bear testimony to this fact. Pending such an investigation the original, native features of the Quileute ceremonial societies will have to remain a matter of speculation.

However, certain features are so unique as to justify us in the assumption that they represent native, and not borrowed, elements. The most important of these is what may be properly termed the professional element, a feature which, thus far, finds a parallel to some extent in the esoteric fraternities of the Zuñi Indians.¹ Each Quileute society is a professional organization; that is to say only persons following the same occupation could belong to it, and each order is, so to speak, representative of one of the four most important occupations followed by the Quileute Indians. Thus the *qēL'a'ak-wāl* is the society for hunters, the *sibā'xulāyo'* for whale-hunters, the *ts!ā'yeq* for fishermen, and the *Lō'kwali* for warriors. The *tcālā'lāyo'*, the Weather Society, is the latest introduction and may have received its occupational mark through the enormous influence wielded by the medicine men, of which we shall speak later. It goes without saying that these societies were introduced not at once but singly; and that each soon after, or perhaps simultaneously with, its adaptation became the order of persons following a certain occupation. We have the testimony of the informants themselves for the order in which these societies were introduced among the Quileute Indians. They are conscious of the fact that the *sibā'xulāyo'* was the first of the non-native societies to be introduced; next came the *Lō'kwali* and *ts!ā'yeq*; and these were followed in turn by the *tcālā'lāyo'*. The Hunting Society (*qēL'a'akwāl*) was in existence among the Quileute Indians from times immemorial and to this society only those who were habitual hunters could belong. The Whaling ritual, as it was practised by the Makah, was a ritual exclusively for whale-hunters; and the Quileutes merely followed an established precedent as well as the spirit of the borrowed society

¹ M. C. Stevenson, "The Zuni Indians," *Twenty-third Ann. Report of the Bureau of American Ethnology*, pp. 407 ff.

when, upon its introduction, they reserved it for whale-hunters and their families. Later on, when the *Lō'kwali* and *ts!ā'yeq* were introduced, the first became the society for warriors, and the second the order of fishermen and (after the Quileutes took to seal-hunting) seal-hunters. The assignment of "weather-persons" to the *tcalā-lāyo'* may have been due to the fact that among a littoral people like the Quileute Indians special respect was paid to persons who claimed to possess tamanos power over the weather. This distinction may also be due to an inherent feature in the original Quinault society which, however, for lack of data from that tribe, we are at the present unable to determine. The gradual breaking down of the native mode of living resulted in a gradual wiping out of the distinct professional character of some of these societies, as can be seen by the fact that in later times canoe-makers, basket-makers, and others were also included in the *ts!ā'yeq*. However, the two oldest orders (the Hunting and Whale-hunting Societies) always kept their distinctive professional features even to within very recent times; and all present living members of these two extinct societies were either actual hunters or whale-hunters. Furthermore, the professional emphasis laid upon these two societies was responsible for the special feeling of fraternization which existed between its respective members (see p. 342). It is also highly probable that originally only the male members of the tribe could belong to any of these societies and that the privilege of enrolling the female relatives of a male member also was granted only gradually and more as a matter of courtesy. This privilege was in the course of time extended until, aided by a desire to insure as much wealth to the future generations as possible, it became universal. However, the two eldest societies kept on granting full membership only to the male members of the tribe.

Another important feature of the Quileute ceremonial societies is the manner of initiating a full member, that is to say of one who had received a special guardian-spirit presiding over a particular order. It will be remembered that the whole initiation ritual revolves around the curing by his fellow-members of the novice who had been rendered sick through the entrance of the guardian-

spirit into his body. Of course, this is not to be taken literally, for the "patient" was at no time actually sick. What the Quileute meant to express by this term was probably the unconscious condition of the novitiate who had partaken of the powers of his guardian-spirit, a condition which disappeared as soon as, through the exorcisms of the shaman and of the fellow-members of the order, the novitiate arrived at an understanding of the qualities of the guardian-spirit. The mystery surrounding the quality and powers of the guardian-spirit was particularly dispelled by the disclosures, on the part of the shaman, of the "color" of that spirit; in other words the novitiate began to feel more at ease by learning the type of his particular guardian-spirit, while the continued incantations of his fellow-members rendered him more normal. This healing phase of the ceremonial is described distinctly by Swan as existing among the Makah Indians.¹ However, this need not be taken as an indication that eventually this Quileute feature goes back to a Makah origin. The belief in shamanistic powers was exceedingly strongly developed among the Quileute Indians, and the shaman exercised an enormous influence over their daily and ceremonial life. Consequently, it seems highly plausible that this healing phase constituted one of the main features of the original Quileute society and that, fostered by the shamans, it became a similarly important feature in the other, introduced secret societies.

The third important point suggesting itself in connection with the ceremonial societies of the Quileute Indians is the probable determination of the ultimate geographic distribution of this tribe. At the present time the Quileute Indians occupy a small strip of the northwestern coast of Washington where they were found one hundred years ago, while their only other cognates, the Chimakum Indians, were found in a much farther northeastern direction, on Puget Sound, in Snohomish County. Quileute mythology is particularly silent on the question of the original home of these two tribes. It does, however, speak of the separation of the two tribes as the result of a great flood. The myth recounting this event is as follows:

¹ James G. Swan, *op. cit.*, loc. cit.

In early times the Quileute and Chimakum lived together. During the great flood the people took to their canoes, floating in them until they reached the crests of the Olympic Mountains. Here they tied them to trees and rocks. One night a great storm arose, and many of the canoes tore loose from their moorings. These canoes drifted in a northeastern direction until they reached the present site of the towns of Chimakum and Port Ludlow. Here the people abandoned their canoes and settled down, becoming in the course of time the Chimakum tribe. The people whose canoes were not loosened remained on the Olympic Mountains until the flood subsided. The receding waters carried them and the canoes towards the shores of the Pacific Ocean. They finally stopped at Quileute Prairie¹ and became known as the Quileute (and Hoh) Indians.²

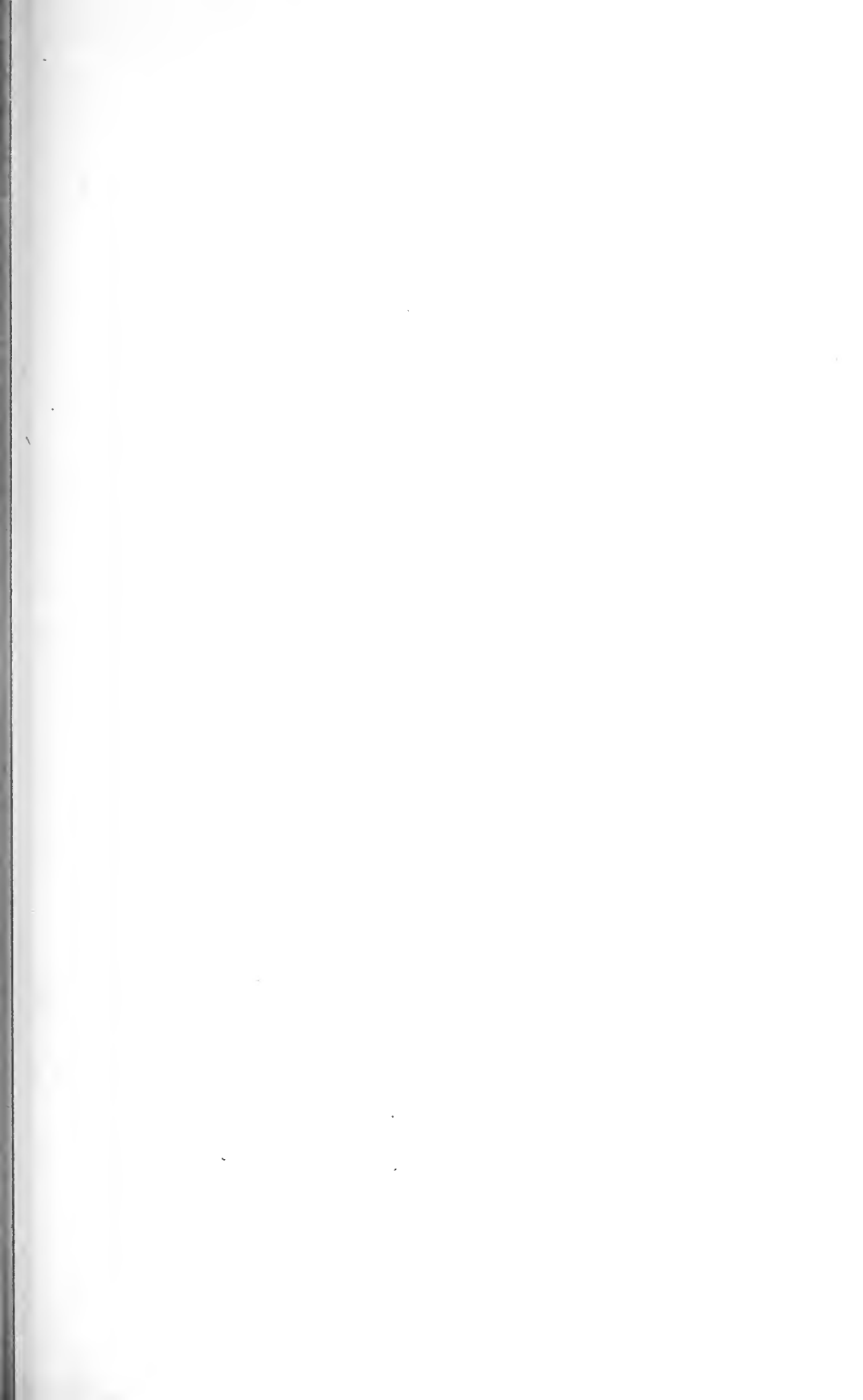
Inasmuch as this myth has little historical probability, the original location of the Quileute tribe must be looked for at a point eastward of their present possessions; in other words, the Quileute Indians must have lived originally farther inland. And a clue that this may have been the case is furnished by the importance and antiquity of the Hunting Society of this tribe. Such a society with its attending ritual could have developed only among a group of people whose main occupation was hunting and whose chief supplies of food were obtained through this mode of living. The probability of this theory is further substantiated by the fact that the Quileute language contains a great number of different verbal stems expressing the various forms of the act of hunting. Now, the only regions in this particular neighborhood abounding in game of all descriptions lie much farther east of the present site of the Quileute reservation, which is practically on the western slopes of the Olympic Range. To this

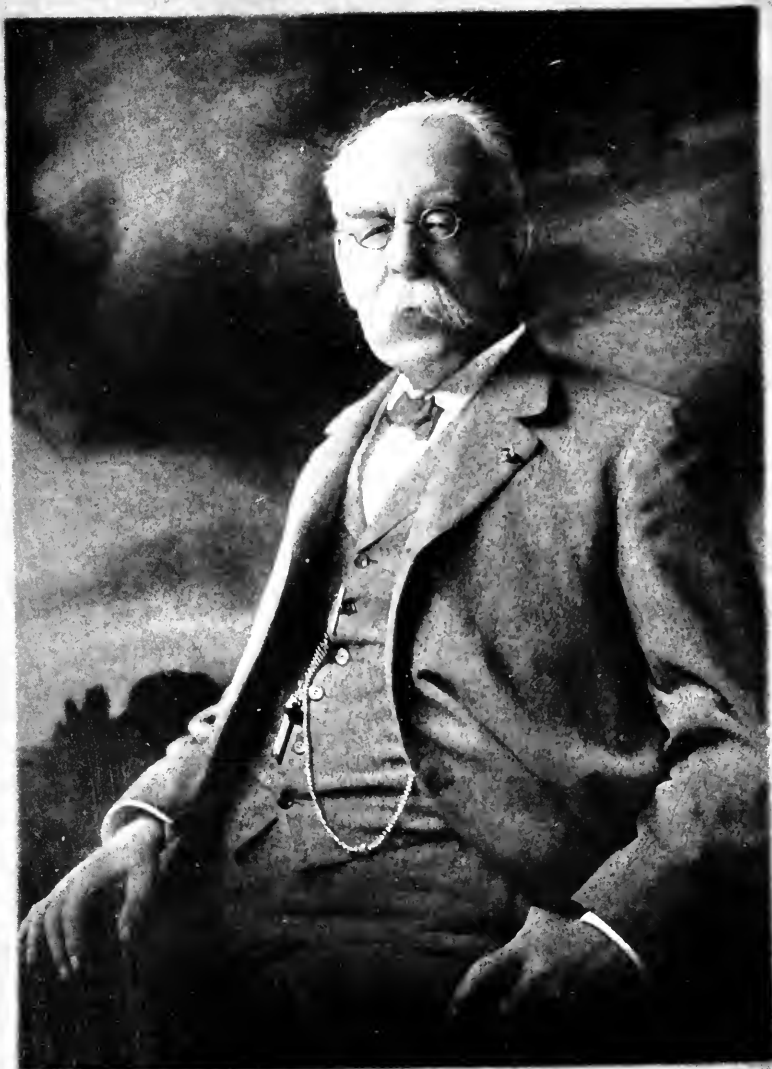
¹ A prairie about forty-five miles south of Cape Flattery and six miles eastward from the present Quileute reservation.

² It is interesting to note that the Makah Indians account in the same way for their separation from the main body of the Nootka tribes. Furthermore, the same phonetic elements differentiating the Nootka from the Makah dialect ($b > m$; $d > n$) differentiate also the speech of the Quileute from that of the Chimakum, two features which, in addition to many other lexical, morphological, and structural correspondences go a long way toward encouraging us in the assumption of an ultimate genetic relationship between Wakashan, Chimakuan, (and Salish).

range the Indians repair even now for the purpose of hunting, and it is here that we must look for the original home of the Quileute tribe. Furthermore, that the Quileute Indians have only within comparatively recent times become fishermen par excellence is demonstrated beyond doubt by the following three facts: First, in ancient times these Indians knew nothing of their present intricate system of hereditary fishing-grounds, this institution having been introduced after their arrival at the mouth of the Quileute River; secondly, traces of old Indian settlements, and even potlatch-houses, have been found as many as twenty miles farther to the east and the Quileutes still remember the native names of these villages; thirdly, the names of the most important sea-fish are not of native origin, having seemingly been borrowed from the Quinault (Salish) language. Of course, it is also quite probable that the original Hunting ritual may have been a general tribal ceremonial, with the identical aspects and in the same sense as, for example, are the tribal rituals among the Creek, Osage, and Omaha Indians. However, the above mentioned three facts militate strongly against this, and we may be justified in the assumption that (1) the Quileute Indians were an inland people, (2) their chief occupation originally was hunting, and (3) their social and ceremonial life was greatly modified by this occupation.

NEW YORK CITY





Henry J. Borraich

CHARLES PICKERING BOWDITCH

AMERICAN ANTHROPOLOGY has lost one of its greatest patrons in the death of Charles P. Bowditch, which occurred on June 1, 1921. He was born in Boston, September 30, 1842, the son of Jonathan Ingersoll Bowditch and Lucy O. Nichols and the grandson of Nathaniel Bowditch. He received the A.B. degree from Harvard College in 1863 and the A.M. degree three years later. He married Cornelia L. Rockwell on June 7, 1866. She and four children survive him. He served in the Civil War as 2d Lieutenant, 1st Lieutenant, and Captain of the 55th Massachusetts Volunteer Infantry and as Captain of the 5th Massachusetts Volunteer Cavalry.

Mr. Bowditch was a man of broad interests as his membership in various learned societies shows. He was elected a member of the American Academy of Arts and Sciences in 1892 and was its Treasurer from 1905 to 1915 and President from 1917 to 1919. He was also a member of the Boston Society of Natural History, the American Antiquarian Society, and the American Geographical Society. His anthropological interests appear in his membership in the following societies: American Anthropological Association, American Association for the Advancement of Science, Archaeological Institute of America, International Congress of Americanists, and the Société des Américanistes de Paris. His historical-genealogical interests are shown in his membership in the Massachusetts Historical Society, the Bostonian Society, the Colonial Society of Massachusetts, and the New England Historical-Genealogical Society. He was the author of the *Pickering Genealogy*.

For many years he took a keen delight in the Bacon-Shakespeare controversy and was the author of *Bacon's Connection with the First Folio of Shakespeare*.

As a man of affairs in Boston, Mr. Bowditch was an officer in many corporations and numerous benevolent enterprises. His

list of charities was a long one. He was the author of the *History of the Trustees of the Charity of Edward Hopkins*.

After a pleasure trip to southern Mexico and Yucatan, in 1888, Mr. Bowditch's main interest, outside that of his business as trustee, became centered in Maya antiquities. This enthusiasm for a region up to that time neglected and practically unknown resulted in establishing an entirely new field in American Anthropology.

Mr. Bowditch's connection with the Peabody Museum of Harvard University was a long and a close one. From 1888, when the records show he presented his first gift to the Museum, up to the time of his death, he was its greatest benefactor. In 1894 he was elected a trustee of the Museum and he served on the Faculty of this institution continuously from that time onward, rarely missing a meeting and always taking a most active part in the deliberations of that body.

In 1891 the Museum sent its first expedition to Central America. With the exception of only a few years this expedition has been an annual occurrence up to the present time. Mr. Bowditch planned and provided for these trips with little outside aid. The early work of Gordon, Saville, and Owens in Copan and the Uloa Valley, the discoveries of Maler on the Usumacinta River and Peten, the long continued investigations of Thompson in Yucatan and especially in the Cenote of Chichen Itza, the expeditions of Tozzer, Merwin, and Hay in British Honduras and northern Guatemala, of Lothrop in Honduras, the second expedition of Morley in Yucatan, and the work of Spinden in southern Yucatan are the most important activities in this line. A very large number of hitherto unknown ruined sites were disclosed and a numerous addition to the wealth of hieroglyphic inscriptions resulted.

There is hardly a man now working in the Central American field today who was not directly beholden at some time in his career to Mr. Bowditch for encouragement and aid.

His interest in sending out expedition after expedition has resulted in a large accession to the collections of the Museum. Among the most important of these are: the large number of original stone carvings from Copan as the result of a concession from Honduras

in 1891 and continuing for ten years, molds and casts of the principal stelae and altars from Copan and Quirigua, lintels and stelae from Yaxchilan and Piedras Negras, and many of the sculptured stones from Chichen Itza, collections of pottery and other objects from the Uloa Valley and Copan, from Holmul, and from many of the ruins of Yucatan. Second to none is the unparalleled collection from the Sacred Cenote of Chichen Itza. This work was planned and financed almost entirely by Mr. Bowditch. The magnitude of these collections can be seen from the fact that they now fill at least three-fourths of two large halls given over to Mexico and Central America.

Mr. Bowditch's one aim was the advance of knowledge of the Maya field and he always laid stress on this rather than on the acquisition of specimens. He gave generously for the publications of the results of the various expeditions to Central America. To him the Museum owes in greater part the publication of the six folio volumes of its *Memoirs* and the following *Papers*: v. 1, nos. 1, 3, and 7; v. 2; v. 4, nos. 1, 2, and 3; v. 6, no. 2; v. 7; and v. 9, all of which contain material pertaining to the Maya field.

As the grandson of Nathaniel Bowditch his mind ran to mathematics and his special interest in Central America was the study of the hieroglyphic inscriptions. His pioneer work in this field was second only to that of Goodman and Förstemann. His acute mind established many facts hitherto unknown concerning the Maya hieroglyphic writing. His unbiased opinion, strengthened by most painstaking study, was brought to bear on the many unsettled problems of the hieroglyphic system. The results of his investigations are summed up in his writings, a list of which is given at the end of this paper. Special mention should be made of his book, *The Numeration, Calendar Systems, and Astronomical Knowledge of the Mayas*. This work was a landmark in the study of the Central American writing and served to focus attention on this subject as no other book had done. His mental agility in working out the dates of the inscriptions and his feats of rapid calculation, often done without the aid of pencil and paper, were always received with wonder and admiration by his friends and

colleagues in this study. His writings were almost exclusively technical in nature and served as guides to the specialist on the way to a complete elucidation of the hieroglyphic writing.

Mr. Bowditch did not read German well and he secured the translation of practically the entire works of Seler, Förstemann, Schellhas, and other German writers in this field. Several of these translations have been published (*P. M. Papers*, v. 4, nos. 1 and 2, and *Bulletin 28* of the Bureau of American Ethnology). The other translations have been deposited in the library of the Peabody Museum. His translation from the Spanish of the *Relación* of Landa and that of Avendaño represent another line which his acute mind took in furthering the advance of knowledge of the Central American field.

Another activity of Mr. Bowditch in Maya studies was the collection of works and documents covering this area. He built up gradually one of the best working libraries on this subject, and afterwards gave it to the Museum. He had the Nuttall Codex copied and published, the Laud Codex in the British Museum copied, and, at the time of his death, he was having prepared a copy of the Sahagun manuscript in Florence with its many colored illustrations. Mr. William Gates kindly allowed Mr. Bowditch to purchase duplicate sets of the photographic reproductions of over fifty thousand pages of manuscripts and rare books on Central America and Mexico. This comprises practically everything in manuscript form now extant on the languages of Central America and much of the material on Mexican linguistics. These reproductions have been bound and given to the Museum. Mr. Bowditch himself reproduced the various manuscripts which he had given to the Museum as well as several which are in other collections.

No field of activity was overlooked. He became the sponsor of several Fellowships. The first Fellowship in American Archaeology of the Archaeological Institute of America as well as the Central American Fellowship of the Peabody Museum were given by him. He was in great part responsible for the establishment of the Division of Anthropology in Harvard University and an Instructorship in Central American Archaeology was first established by him.

Instruction in this subject has been carried on by Harvard since 1905.

As one of the Founders of the American Anthropological Association, Mr. Bowditch was a generous supporter of the cause of Anthropology in America. His ready response could always be depended upon for overcoming deficits and for advice. There is perhaps no other instance in American Anthropology where an effort in one field of interest has been so long continued, so intense, and so productive of results. His monument is the Central American collections in the Peabody Museum, its Maya publications, and its remarkable collection of books and manuscripts on Middle America. This monument will continue to increase in size as his generous interest in the Museum will be reflected in future activities in the Maya field.

Mr. Bowditch was a man of very strong personality. He tried to carry out the letter of the law and expected others to do so. Forceful but modest, always with opinions but willing to reason, wrathful before underhandedness but just to all, Mr. Bowditch will be remembered by his colleagues as one of the greatest friends of the science and one who tried to uphold its highest traditions.

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BOOK REVIEWS

METHODS AND PRINCIPLES

A Laboratory Manual of Anthropometry. HARRIS H. WILDER. P. Blakiston's Son & Co.: Philadelphia, 1920. 193 pp., 43 ills.

This book of two hundred pages, opens with the sentence:

It has long been a reproach to American science that now, for many years, the branch of Physical Anthropology has been so little cultivated, and this the more because of our early prestige in this very field and because of our unrivalled opportunities. . . . It was with a view to directing a broader American attention to this vitally important branch of Anthropology that the author . . . drew up, based largely upon the prescription of 1906, a set of rules for the guidance of the laboratory student . . .

The intention of publishing a book on anthropometry in America is to be lauded, even though rules for measuring have been published repeatedly in American journals (see: Wilder, in *Science*, LIII, p. 20). Wilder's manual will, no doubt, help to stimulate anthropometric work and will be especially of assistance in college courses on anthropology. The student receives from it guidance as to *what* and *how* to measure both the outer body and the skeletal parts of man, becomes acquainted with the chief anthropometric instruments, and learns what absolute measurements can to advantage be combined to form indices. The technical instructions are in parts enlivened by examples of the results of measurements taken on different races.

From a critical point of view, however, a perusal of the manual leaves an impression of a certain unevenness and partiality in the arrangement and selection as well as the illustration of the text. The subject matter is divided into osteometry, comprising 114 pages, and somatometry, to which only 16 pages are devoted, a disproportion which seems hardly justifiable. The scanty bibliography (in footnotes), which is intended as an introduction to the literature on anthropometry, omits in many instances very important publications while giving certain specialized papers of no general interest. In the part on "biometric" methods, which might more correctly be called "statistical" methods, one fails to find any mention of the correlation coefficient, which is as important as the coefficient of variation. Also the formulae for the various probable errors should have been included in this discussion. The lengthy chapter on craniometry would gain in value by a short enumeration of

the points for determining age, sex, and normality of the skull. It also may be mentioned that the list of measurements on one hundred girls in Appendix B would be improved by grouping the girls according to age and race.

In going through the book more in detail, a number of items are encountered which are open to criticism. The historical review in the introduction is incomplete, neither Blumenbach, Retzius, nor R. Virchow receiving any mention. In the description of anthropometric instruments, particularly of those for taking angles, Mollison's convenient craniophore should not have been omitted. The caliper in figure 1 is not the one made by Hermann, as stated in the title of the figure, and has not a straight scale as described in the accompanying text, but apparently is the same as pictured in figure 2. In describing the method used in placing a skull in the Frankfort horizontal (p. 22) four points are mentioned as involved in this horizontal. Although corresponding to the original draft of the Frankfort convention, practice has since taught us the untenability of this provision, all the more so as three points are sufficient to establish a plane. It should have been pointed out at this place that two poria and the left orbitale suffice to determine the ear-eye plane. On page 57 the statement is made:

Few people, even anatomists, realize to how great an extent the axis of the human skull has become shortened and bent together.

This inclusion of anatomists is, to say the least, unnecessary in a manual for students, and no doubt incorrect. In figure 26 the various facial height measurements are correctly termed "heights," but on page 57 and others the author speaks of the same measurements as facial "lengths," and the facial "length" measurements of figure 26 are referred to in the text as facial "depth." This regrettable mix-up would tend to confuse the student. On page 58 the assertion is made that, in the triangle formed by lines between nasion, basion, and prosthion, the angle with the apex at the basion is the most important. The reason for this preference of one angle is difficult to see and open to argument. On page 71, G. Schwalbe is said to have used the glabella-inion line instead of the nasion-inion line, "in accordance with the usage of the time." This should more properly read, "according to the subject under investigation." In the discussion of the vertebrae (p. 76 and following) the author speaks of their "antero-posterior thickness," meaning the *height of the corpus*, and not until page 112 does he explain, in a footnote, that "anterior" and "posterior" stand for "superior" and "inferior." If these terms have to be changed at all, it would be clearer to use *cranial*

and *caudal*. The footnote just mentioned contains the statement that "the nomenclature used is the morphological one, as related to any mammal"; but on page 77, in some formulae for indices, the author calls his "antero-posterior thickness" the "vertical diameter of vertebra," which is inconsistent. The comment on the table of lumbar indices (p. 77) reads in part:

In the first and second (lumbar vertebrae) the bodies are wedge-shaped, with the lesser thickness (the edge) pointing backwards (dorsally); . . . in the fourth and fifth the wedge is turned around, with the edge pointing forwards (ventrally). In both instances the contrary is true, a fact which is well known, and which, furthermore, is shown by the table on page 77. How unevenly the subject matter is treated in certain parts is best shown by the fact that, whereas nearly two pages are devoted to the patella, the discussion of the sternum is exhausted by the statement that "very little has as yet been done with its anthropometry. . . ." This is not very flattering to investigators of the metric features of the sternum, such as Anthony, Bogusat, Dwight, Eggeling, Henke, Krause, Lubosch, Martin, Petermüller, Strauch, Weisgerber, and others. The description of measurement 6, on page 84, is unintelligible; the instruction that it be taken in a plane parallel to the long axis of the bone is of little help, inasmuch as there are innumerable planes parallel to one line. The first measurement on the radius (p. 98) is called "greatest maximum length"; would not one of these epithets suffice?

In addition to the defects enumerated above, there are many other minor errors and discrepancies among which the following may be mentioned: Page 30, line 13 from bottom: multiplying column *two* (instead of *four*) by column three; page 49, lines 12 and 8 from bottom: *opisthocranion* (instead of *opisthocranium*); page 75, figure 28: the measurements "naso-alveolaire" and "naso-sous-nasale" should be reversed in the diagram; page 82, table: some of the figures are incorrectly copied; page 84, No. 3: epicondyles, according to B. N. A. (instead of "condyles"); page 90, line 9 from bottom: in the formula it should read "length of chord *a b*" (instead of *A E*); page 92, line 6 from top: there is no "*n*" in figure 33 as stated in the text; page 94, line 6 from top: "line *A E* (Fig. 34)" is not to be found in that figure; page 116, footnote, line 5 from bottom: *Anthropologie* (instead of "*Anatomie*").

Such a considerable number of oversights and actual mistakes, which have been cited only in part, would suggest the advisability of a careful revision of the book, so that it might be of more value to the student.

ADOLPH H. SCHULTZ

NORTH AMERICA

New York City in Indian Possession. REGINALD PELHAM BOLTON.
(Indian Notes and Monographs, vol. II, no. 7.) Museum of the
American Indian, Heye Foundation: New York, 1920.

This is an unusually interesting as well as valuable monograph. Based on deeds of purchase, charters, and other historical sources, and well related to archaeological evidence, it classifies the Indians of the vicinity of New York City. Eight groups of the Unami Delaware held the lands west of the Hudson, seven of the Wappinger Mahikan those to the east, and thirteen Matouack (Montauk) divisions occupied Long Island. Manhattan was mainly in the possession of the Reckgawawanc Unami, but its southern tip, northeastern Staten Island, and the islands in the East River were in Canarsee Matouack occupancy. An excellent map illustrates these interrelations, besides showing some eighty native stations or sites. In successive chapters the ownership or grouping of Manhattan, the Mahikan, Matouack, Unami, and Staten Island are succinctly reviewed. There follow chapters dealing with land purchases, a list of stations, a classified list of native personal names, and an index of all proper names. There are no citations of the original sources; but the inclusion of these would have rendered the volume cumbersome without adding much of anthropological value. The treatment gives every impression of an accuracy and soundness which render the full presentation of the historical sources unnecessary. As a piece of writing, the publication is pleasing, particularly in the neatness of its style.

Work of this order has much more than local or antiquarian interest. It provides knowledge of the concrete basis of native social, political, and economic life, and thus contributes a foundation for interpretative generalizations.

A. L. KROEBER

Hawikuh Bonework. F. W. HODGE. (Indian Notes and Monographs, vol. III, no. 3.) Museum of the American Indian, Heye Foundation, New York, 1920.

Bonework has been the Cinderella of native Indian handicrafts. In the East it has been overshadowed by the variety and interest of the stone implements; and in the West, particularly in the Pueblo region, pottery has usurped the attention of most writers of archaeological reports. In the present publication, however, the art has finally come into its own; and for the first time the bone implements of an Indian tribe have been fully and satisfactorily treated. How richly these generally neglected little objects have repaid study can be seen by a glance at the excellent illustrations in Mr. Hodge's monograph.

The opening section deals with primary processes in the working of bone and antler. (One might suggest that bone and antler could be more clearly described if handled separately, both for processes of work and in the chapters on implements. The two materials are really quite dissimilar in physical properties, require different methods of manipulation, and produce tools which do not classify well together. I feel quite sure that an Indian would not consider bone and antler as belonging to the same category of materials.) The body of the book is occupied by full descriptions of the various classes of objects; and the conclusion points out the fact that bonework, like other arts at Hawikuh, was practically uninfluenced by 130 years of Spanish contact.

Although bone implements grade into each other in a way that makes classification difficult, a grouping is not, as Mr. Hodge has demonstrated in this paper, impossible. The classification might, however, to my mind, have been carried somewhat further and have been tabulated somewhere in the text. For example: the subgroups into which the author has divided the awls can only be made out by repeated reading of the text and comparison with the plate captions; it would be simpler for the student if he could grasp this grouping at a glance. A tabulation would also have permitted the author to express, by numerical data incorporated in it, the relative abundance of the various types, not only of awls, but also of the other classes of implements. This was done by Morris in his tabulated classification of pottery designs from the Aztec ruin (*Anth. Papers Am. Mus. Nat. Hist.*, vol. XXVI, pt. 1).

The above bit of criticism serves merely to emphasize what is perhaps the most outstanding virtue of the paper, namely the fact that the relative abundance of types actually *is* expressed, so that the reader can get a clear idea of what is common, what is rare, and what is unique. This very important information is all too scanty in most archaeological publications for most writers have emphasized in the text, and particularly in plates, the odd or beautiful specimens; and neglected entirely, or at best failed to stress, the ordinary, abundant, and therefore really most significant specimens which have come from their excavations. Unusual objects should of course be shown, as the finest often represent the highwater marks of local art, and the aberrant ones are likely to be trade pieces, but it should always be made plain to the reader, as Mr. Hodge has done, that such objects *are* unusual.

The book is an excellent exposition of the bonework of this particular site, and is very useful as such; but it stands at present too nearly alone to render the full service that it will eventually give when similar studies have been made for other districts, and one can judge to what degree

their art in bone differs from that of Hawikuh. That there are differences there can be no doubt; Mr. Hodge's book already enables one to recognize a few: the deer-humerus scraper, for instance, so common in the late ruins of the upper San Juan, fails to appear at Hawikuh; the awl-like weaving tool is very abundant at Hawikuh, extremely rare at Pecos.

Such differences are not the result of the animal environment, for that is practically uniform over the three regions just mentioned; they must represent, then, real though unobtrusive differences in the cultural complexes involved. Their very unobtrusiveness gives them a peculiar archaeological value, for the humbler and less considered the tool, the less is it likely to be affected by fortuitous circumstances. Styles in pottery may change because of the chance introduction of new styles of ornamentation, or the acquisition of new clays; architecture may be radically altered by new building materials or the exigencies of a new site. So modest an art as bonework, with so unchanging a raw material, should be, however, much more stable and should help us, if studied as closely as by Mr. Hodge, toward the solution of many difficult problems. For example: the great Aztec ruin is allied ceramically to the later Mesa Verde cliff-houses, and architecturally to the large pueblos of Chaco Cañon. At present we have no way of knowing whether the Aztec people merely borrowed from their two neighbors impartially, or whether they were basically related to the one or the other of them. If, however, we should find that their bonework, an art to which they hardly gave a second thought, was closely akin to, say, that of the Mesa Verde, and different from that of Chaco Cañon, should we not have a very weighty argument for considering them as allied to the former?

I certainly do not wish to insist that the problems of Southwestern archaeology can be settled by the study of bonework alone. As a matter of fact most archaeologists, the reviewer included, have been all too prone to work along single favorite lines, to overemphasize certain categories of evidence: one has a penchant for architecture, another for pottery, a third for clan migration-tales. All are valuable, but so far at least no one has been proved more valuable than another, because no single site or district has yet been considered from all points of view, and therefore it is not possible properly to weight the different classes of evidence. The present intensive excavations at Hawikuh, Aztec, the Chaco, and Pecos give promise, however, of a new era in Southwestern archaeology, one of the first signs of which is Mr. Hodge's unassuming but highly important paper. The present review is really a plea to all field-men to "go and do likewise."

A. V. KIDDER

Native Cemeteries and Forms of Burial East of the Mississippi. DAVID I. BUSHNELL, JR. (Bulletin 71 of the Bureau of American Ethnology) Washington, D. C., 1920.

Under the title quoted above the reviewer was surprised to find not a large memoir, but a pamphlet of some 160 octavo pages, including the index, purporting to deal with the mortuary customs of the Indian tribes inhabiting the greater portion of the wooded part of North America, peoples divisible into a number of distinct culture areas.

Even a hasty perusal of Mr. Bushnell's leaflet strikes the reader with surprise at its superficiality on the one hand, and on the other with the heterogeneous mass of misinformation and obsolete data it contains. A glance at the bibliography does not improve the impression made by the text. Why Mr. Bushnell ignores the fact that there are in the land several scientific institutions of standing, such as the American Museum of Natural History, the Peabody Museum of Harvard, the Museum of the American Indian, the Public Museum of the City of Milwaukee, The Provincial Museum of Ontario, and a host of others which have devoted time and treasure to the practical investigation of the very subject dealt with in his compilation, is as great a mystery as the system by which he has made selection from the sources he does quote. One may search the leaflet from cover to cover for any mention of a number of men whose lives have been largely spent in research and publication of data on Indian mortuary customs, many of whose works are commonly regarded as standard reports by their fellow students. We may mention a few so well-known as Boyle, Hunter, Laidlaw, Parker, Bolton, Heye, Pepper, Houghton, Barrett, and Moorehead, and still leave the list incomplete.

Owing to the lack of space required for an exhaustive critique of Mr. Bushnell's paper, the writer will confine himself largely to a few observations on one of the regions with the archaeology and history of which he is somewhat familiar, namely the Iroquois and Algonkian area of the Middle Atlantic States.

Were it not for the brief and cryptic hints which Mr. Bushnell throws out concerning the occurrence of Indian burials "in the vicinity of Manhattan Island," one would suppose him to be ignorant of the work of students of the archaeology of that region for the last half century, but these hints, coupled with a casual remark on the fact that a Munsee cemetery containing two types of burials had been found at Montague, northern New Jersey, shows that it was some curious personal bias that caused Mr. Bushnell to ignore the many writings of his prede-

cessors in this field. For the benefit of the uninitiated, be it said that the cavalier reference to the Munsee site refers to work done and described in an excellent monograph by Messrs. Heye and Pepper in Vol. II, No. I, of the *Contributions from the Museum of the American Indian, Heye Foundation*.

It might be added that, from a geographical standpoint, the author is scarcely justified in locating Montague *south* of Manhattan Island. Moreover, his lengthy quotation from Heckewelder on a late historic Delaware funeral applies, not to this earlier site, but rather to one of a later period, discovered at Port Jervis, N. Y., in which the dead were interred in coffins, opened and described by Mr. Parker, the New York State Archaeologist.

As to why Bushnell quotes only from Van der Donck amid the array of contemporary Dutch writers on the New York Coastal Algonkian, we would hazard a guess that the identical quotation occurs in handy form in a recent paper on local archaeology by the writer of this review, except that we find in Mr. Bushnell's bibliography nothing on this region more recent than Dr. Beauchamp's first publication on the *Aboriginal Occupation of New York*, an excellent pioneer volume, a careful perusal of which might have saved the author from several errors. We hereby refer him to Dr. Beauchamp's observations on the lack of identity between the Iroquois and the builders of the mounds found in their territory, for example. There are a number of other works by Dr. Beauchamp, all of which are important, and several by Parker, including a monograph on a burial site of the Erie, published by the New York State Museum. Of these Mr. Bushnell seems ignorant, as he is of the various publications of other prominent museums and societies in New York State. Otherwise it would not have escaped his notice that the Iroquois were not the pristine inhabitants of the region in question, and that there are evidences of, not one, but several peoples of different culture who preceded them.

The mounds on Long Sault and St. Regis Island in the St. Lawrence River, which he uses as the basis of his impossible hypothesis that the Iroquois were mound builders, are well known to have been made by people of another culture, containing, as they did, objects of types utterly foreign to the Iroquois complex. For example the specimens found in the former tumulus are now in the American Museum and the Museum of the American Indian, and, among other things, consist of slate tubes, gouges, beads of native copper, huge flint blades, and non-Iroquoian pottery.

If, as Bushnell states, on unknown authority, a piece of mica is proof positive that a mound opened near Chenango, N. Y., was of Tuscarora origin, then on this evidence the makers of the shellheaps at Shinnecock Hills, Long Island, and at Tottenville, Staten Island, hitherto considered Algonkian on mere cultural and historic evidence, were Tuscarora, and so were the inhabitants of what we considered to be an ancient pre-Iroquoian Algonkian burial village and burial site at Cayuga, N. Y., for mica has been found in all these places. The mystery of the origin of certain Ohio mounds will also be dissipated by this token.

Why Mr. Bushnell laments the lack of any detailed description of the ossuary at Gasport (or Orangeport), N. Y., is a mystery, since two accounts by competent observers are available, in the *Bulletin of the Buffalo Society of Natural Sciences* for 1912. Incidentally, the reports of this ossuary, and another found near by, are illustrated by photographs superior to the one shown by Mr. Bushnell.

We should like to make some further inquiries with regard to Mr. Bushnell's data on several other aboriginal areas farther afield. We should like to know why the important work of Barrett on the Kratz Creek Mounds in Wisconsin has been neglected, and whether the learned author's silence as to Warren K. Moorehead's recent discoveries with regard to the "Red Paint" culture of Maine is due to an oversight.

On page 79 of his monograph Mr. Bushnell quotes from *Graham's Magazine* for January 1853 an account of certain burials found near Avon, N. Y., near the east bank of the Genesee River, which says in part: These discoveries strengthen a belief long entertained, that in 1687 the Marquis de Nouvellé fought his famous battle with the Senecas at or near the burial place mentioned, that on the banks of the Genesee, within the limits of Avon, Frank and Red Man closed in mortal death-struggle.

It is an axiom that it is unwise to look for accuracy in the haphazard articles found in newspapers and magazines, hence they are seldom quoted as authorities. The facts of the case are that there is no Marquis de Nouvellé connected with the early colonial history of New York. There was, however, a Marquis de Nonville, who did, in 1687, fight a severe battle with the Seneca, and for many years the location of the battle has been known. The place is in another county from the site near Avon, not far from Victor, N. Y., near the foot of Boughton hill, where stood one of the principal Seneca villages of that date. It may interest Mr. Bushnell to hear that de Nonville's army found a very interesting Seneca cemetery or cemeteries on the hill, and that these did not escape minute description by him. Even a casual survey of the

writers, ancient and modern, who have written on Iroquois burial customs alone would enable him to compile a book several times as thick as the one under discussion.

Mr. Bushnell's omissions are sometimes little short of amazing. On page 148 he states:

Only one instance can be cited where objects found in contact with burials had apparently been made especially for the purpose of being placed in the graves. This refers to the small thin earthenware vessels discovered in the stone graves in Missouri, as described. These small delicately formed bowls would have been of no practical use to the living, being very fragile and composed solely of clay without the usual admixture of pulverized shell or sand; and consequently they may be considered as mortuary bowls, fashioned to hold the offerings to the dead, to be placed in the grave with the remains.

In the early reports on Florida archaeology written by Clarence B. Moore are a multitude of references to ceremonial vessels made with holes in the base before the firing of the vessel. In *Mound Investigation on the East Coast of Florida*, page 8, one finds for example:

For the benefit of those not familiar with our previous Reports on the Florida mounds, we may say that it was the custom in that state often to knock out the bottom, or to make a hole through the bottom, of earthenware vessels, previous to inhumation with the dead and that this custom is believed to have been practised with the idea that the mutilation 'killed' the vessel, freeing its soul to accompany that of its owner into the next world. Apparently, however, it entered the minds of the more thrifty among the aborigines that vessels of value might serve a better purpose, and hence there arose a class of ceremonial ware, usually small in size, often of fantastic design and always of flimsy material, with bases perforated during the process of manufacture. This cheap ware was probably kept on hand and did duty for vessels more valuable and less readily spared.

Similar observations may be found in Mr. Moore's "Certain Sand Mounds of the St. Johns River, Florida," Part I. *Journ. Acad. Nat. Sci., Phila.*, Vol. x, Pages 43, 44. Plates XIII, XIV.

Ditto, Part II, Vol. x, Pages 143, 147, 242. Plates XVII, XX, XXII, XXIII.

"Certain Sand Mounds of Duval County, Florida," Vol. x, p. 35. Plates LXXIV, LXXV.

Professor Wm. H. Holmes writes ("Earthenware of Florida," p. 118, *A. N. S. Journ.* Vol. x, 1894),

It is quite certain that articles so rude and fragile could have served no purpose in the arts; that they were not intended for use as utensils is supported by the fact that in most cases the vessels were made perforate. The paste is crude clay so slightly baked that many of the specimens fairly fall to pieces of their own weight.

The practice of perforating vessels on consigning them to the grave was common along the Gulf coast and across northern Florida, but the making of vessel forms with perforated base has not been observed outside of Florida, and was first made known to anthropologists by Mr. Moore in "The American Naturalist." One specimen only of this class, from Franklin county, Florida, is found in the National Museum.

In conclusion it may be said that of all the recent publications on archaeology brought out by the scientific bodies of North America, only one other can approach the volume under discussion in lack of thoroughness, and that is the paper on the Indian village sites, recently published by the same author.

ALANSON SKINNER

SOUTH AMERICA

The Changes in the Material Culture of Two Indian Tribes under the Influence of New Surroundings. (Comparative Ethnographical Studies, 2.) ERLAND NORDENSKIÖLD. Goteborg, 1920. Pp. 1-245, 58 text figures, and 22 maps.

This work is a continuation of the volume briefly noted in these columns (vol. 21, 1919, pp. 194-196) in which Dr. Nordenskiöld presented a stimulating analysis of the culture of the Choroti and Ashluslay. In this second volume he applies the same methods to the Chiriguano and Chané tribes on the borderland between Bolivia and Argentina, which the author visited in 1908-9. For a clearer understanding of the kind of data the author deals with, it may be stated that the Chiriguano are a Guaraní people who came into the region in the sixteenth century and subdued the Chané who are of Arawak stock. Thus, there were brought into intimate contact two somewhat different types of culture. The new environment into which each moved successively also brought them into contact with other cultures, particularly with the higher culture of Peru. Again, somewhat later, European influences came in. As in the previous volume, the author undertakes to analyze the complex resulting from these many contacts and thereby identify the traits that came from each specific contact. His method is essentially the plotting of trait distribution upon duplicate maps and drawing inferences as to sources of dispersion. As in the first volume the author claims this to be a new method and, while politeness may demand one's passing over this claim in silence, it is due the reader to call attention to the point that, after all, the author is merely discussing the distribution of traits, reasoning from these to conclusions as to the place of origin and relative age. His individuality is, therefore, limited to the forms of his maps and tables.

Further, he shows lack of experience in handling distributions and unfamiliarity with the methods of the American school in particular. This is not said to condemn the work of the author, but to indicate the limits to his excellent contribution. He has most carefully compiled the data and his tables and maps will ever be a source of reference on culture distribution in South America. Further, the idea of plotting bibliographies on a continental map is ingenious and highly original. From these one can see just what parts of the continent can be approached through the literature of a given period.

In addition to the six maps showing the distribution of bibliographical material, there are sixteen for culture traits as follows: pile buildings, the platform bed, hammock, hunting net, multi-pointed fishing arrow, fishing with poison, Tipoy (carrying-band and analogous garment), stained teeth, games with India-rubber balls, trumpet, pan-pipe, masks, vessels with string-holes, baskets with lids, the Arawak loom, and urn burial. These are based upon data compiled under twenty-two tables giving the tribal names for which the different traits are listed in the literature of the subject. Anyone experienced in distribution studies will appreciate the industry and patience necessary to such a compilation. The text is further objectified by some 58 halftones and line cuts. The bibliography contains 310 selected titles and seems to cover the field exhaustively. This feature alone will make the volume one of great service, particularly since the maps show just which of these titles apply to a given locality. Thus this volume can be recommended as a serviceable research handbook in the material culture of South America.

In the text each of the most important culture traits is taken up in succession. For example, we find a further discussion of the pellet-bow, as presented in the first volume, showing a strong case for its introduction by Europeans. In this, as in all other cases, it is the peculiar restricted distribution that suggests the relative newness of the trait.

The pan-pipe is touched upon lightly—too lightly, we think—but the peculiar restricted area of its distribution is noted with the seeming inference that, whatever may have been its origin, it is relatively recent and spread from the Andes.

In contrast to the preceding, the case of the trumpet is considered at length. It appears that there are two world types of trumpets represented in South America—the end-blown cow-horn type and the side-blown, or African tusk type. The distribution of the two in South America shows a massing of the side-blown type in the basin of the Amazon, where due to the presence of the bush-negro and early contact with

negro slaves, the idea could have been readily transplanted from Africa. The author, therefore, inclines to the view that the side-blown type is of post-Columbian origin in the New World, though he concludes that the evidence is as yet not as convincing as one could desire. Yet the reviewer fails to see that the evidence is less pertinent than in similar cases where he shows no hesitation in reaching a conclusion. The fact that the type does not occur outside of the eastern half of the Orinoco-Amazon basins is as good an argument as the facts concerning the pellet-bow. They should, if the author is consistent, indicate a recent origin.

In an interesting discussion of urn burial, the author distinguishes between secondary and primary. This, perhaps better than any other section of the book, shows one difficulty in properly evaluating the data of the maps. The author reasons that because urn burial is most intensely distributed in the western half of South America, it had its origin there and not among the Guarani-Tupi, as has been proposed. The distribution map presented would justify this conclusion, but when he goes further and attributes its origin to Peru, we fail to follow, because the data on the map give no clues as to the center of distribution. Further, he makes the statement that it is "a western cultural element which first spread eastwards to the east coast of S. America and then was carried back from east to west by the Chiriguano" (p. 190). It is this part of the author's method that is a bit disappointing, for one gets the impression that he has thought the thing out rather carefully and then set down the result without telling how he arrived at it. The plotting of distributions is an empirical matter and of the most pressing importance, but the recording in somewhat similar fashion of one's interpretations of these phenomena is not sufficient. So such statements are in the highest sense suggestive, but difficult to evaluate. This statement should not, however, obscure the empirical merits of a work that will be indispensable to the student of the future.

CLARK WISSLER

AFRICA

The Ila-speaking Peoples of Northern Rhodesia. EDWIN W. SMITH and ANDREW MURRAY DALE. London: MacMillan and Co., Ltd., 1920. 2 vols., pp. XXVII, 856, illus., map.

The Baila, who together with the neighboring tribes described in these volumes number 60,000, live on the Kafue River north of the middle Zambesi. As the group is dialectically and culturally homogeneous it is treated as a unit, but some care is exercised in discriminating the customs

of the Baila proper. The several chapters are accredited to the author primarily responsible, missionary and administrator respectively: an excellent feature were it not for several lapses in team-work (thus, the proportion of females to males is three to two [I, 15], while the excess of adult women is only ten per cent [II, 64]; which may well be true, but is not explained). On the whole, it is a well-written, well-illustrated, and welcome addition to the MacMillan series.

Baila economic and industrial life forms the bulk of Volume I. The circular village plan is invariable. There is marked interest in cattle, in which holdings rise to 600 head. Dairy products are the staple: a great drum is beaten during milking. Agriculture is but moderately developed, nevertheless the three acres per family furnish ample supply. Both sexes till the fields. An interesting calendar of seasonal activities and a full list of food stuffs is given (I, 141, 149). Ivory-turning and iron-working are professional activities, while there are itinerant foreign workers in wood. Smelting lies in the province of the "iron doctor." Weaving is unknown: pottery is made by women, pipe-bowls by men. There is a curious coiffure to which the young men are addicted; an enormously long "horn" of hair rising straight from the crown.

Personal relations are nicely delimited. The rigors of etiquette present many pitfalls for personal affronts, which are made the most of by a litigious people. An interesting account of leechcraft is given in some detail. The common belief in super-physical powers resident in objects and persons is formulated with some reserve by the authors as a belief in "dynamism." So with a "doctrine of souls" and the concepts of divinities and the supreme being, but care is exercised to present theory apart from the native statements. Proverbs, riddles, and conundrums are interpreted with discretion. A selection of representative folk-tales is appended. Volume II also contains a distinctly unilluminating section on the dialect; indeed it is difficult to differentiate what refers to the Baila from hypothetical primitive Bantu.

Baila history is notable for the absence of the characteristic recital of chiefs' genealogies. The authors discriminate between two physical types, which, however, do not correspond to social gradations (no measurements are given). The people are grouped into some eighty or more communities, averaging 750 persons, although some are as large as 3000. (The partial list, giving populations [I, 313-315], is valuable.) Each has a chief, and each village or section a headman. The functions of the former differ little from those of the latter, who with him form a council for hearing disputes. Maternal sibs exist, although the families, which

are nameless, are paternal. A list of 93 clans named for animals, plants, places, or persons, is given, together with the localities with which they are associated. Presumably the clans are localized in fact as well as in native theory, although a clan is found in several communities. Yet a man has a definite standing in his mother's community, where his clan-mates reside, beyond that in his father's and his own, and he may even be elected chief there. Further, we are told that the selection of a chief by council "is the business primarily of the clan, assisted by other elders of the community and friends," yet he need not be a clansman. The confusion of clan and community, which is common to most general accounts of East and South African tribes, might well yield to an application of the census method. Age-grades unite one with all men and women born and initiated in the same year, and secondarily with his parents' grades. Members exercise mutual privileges of ridicule and may demand assistance. Terms of relationship, illustrated by genealogies, complete a valuable section.

Aside from its value in depicting a hitherto undescribed people, this book is also as useful as an introduction to East African ethnography as the works of Roscoe and Junod. In the face of this sympathetic and well-rounded account, it may seem churlish to point out that a host of questions which naturally arise can not be answered for lack of precise data. And yet the most valuable feature of the book is undoubtedly its fairly full illustration with concrete cases.

LESLIE SPIER

History of South Africa from 1873 to 1884. GEORGE MCCALL THEAL.

London: 1919. 2 vols. 8°, pp. xvi, 352, xi, 312.

These volumes though appearing under a special name and as a pair are in reality part of a great series of eleven volumes covering the history of South Africa. The first volume of the series now appears under the title *Ethnography and Condition of South Africa before 1505*; the next three volumes are entitled *History of Africa South of the Zambesi from 1505 to 1795*; the next five are *History of Africa South of the Zambesi 1795 to 1892*; the remaining volumes are the two before us. The author of the work is well known; though born in Canada he has spent the greater part of his life in South Africa; he died last year, in his eighty-second year, while these volumes were in press. His great history has only indirect interest for the anthropologist, though the first volume is in our field. When it was first published it was an independent work, with the title *Yellow and Dark-skinned People of Africa South of the Zambesi*.

In these final volumes we have a plain and simple narrative of "twelve eventful years." The period includes the Zulu War, the attempt to destroy the Transvaal Republic, and the effort to disarm the Basuto. It is a story of aggression and imperialistic expansion. To the anthropologist it is chiefly interesting as depicting contact between two peoples fundamentally different and the results of the contact.

FREDERICK STARR

SOME NEW PUBLICATIONS

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Boule, Marcellin. *Les Hommes fossiles; éléments de paléontologie humaine*. Paris: Masson et Cie, 1921. XI, 491 pp., 239 ill.

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Luschan, F. von. Kriegsgefangene. Hundert Steinzeichnungen von Hermann Struck. Mit Begleitwort von Prof. Dr. F. von Luschan. Berlin: Reimer (Vohsen), 1916. 27 pp., 60 ills., 100 drawings.

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DISCUSSION AND CORRESPONDENCE

COPPER OBJECTS OF THE COPPER ESKIMO—A REPLY

MY paper on "Native Copper Objects of the Copper Eskimo," published in *Indian Notes and Monographs* of the Museum of the American Indian, Heye Foundation, has called forth a criticism by Mr. Jenness which appears in the April-June issue of the *American Anthropologist*. Doubtless Mr. Jenness has reason for his remarks, and perhaps will explain more fully in a future number of the *Anthropologist* just what he means when he says that "for nearly twenty years the Copper Eskimos have been in almost continuous contact with white men." Perhaps, too, he will tell us where these isolated primitive people found a market for the copper objects which he says they manufactured for sale in Coronation Gulf in 1911.

Mr. Jenness claims that a copper tomahawk modeled after the Indian weapon was found in Coronation Gulf in the year named. Surely the idea of the manufacture of this weapon for sale was not obtained from any of the sub-Arctic Athapascan Indians. Perhaps some white tourists in the Gulf ordered it.

Mr. Stefánsson commanded the Canadian Arctic Expedition of which Mr. Jenness was a member, and is regarded as an authority on the Copper Eskimo culture, being both an able ethnologist and a truthful chronicler. I quote a few references in Mr. Stefánsson's writings in answer to some of Mr. Jenness's criticisms.

Respecting the contact of the Copper Eskimo with the whites:

May 15, 1910 was the third day after our discovery of the Dolphin and Union Straits Eskimo.¹

As for the contact of the Victoria Island Eskimo with the American whalers, there is little to be said. Only one out of the thirteen tribes visited by my party had ever been seen by the whalers, and they were first seen by the schooner *Olga* in 1906, when she wintered behind Bell island near the southwest corner of Victoria island. They were revisited by the *Olga* in 1908, but by no other ship, and the total contact of the *Olga*'s crew with the people did not amount to a week of continuous association.²

As to Mr. Jenness's criticism of the copper knife illustrated in my paper (pl. v, a), I wish to call attention to fig. 46 of Stefánsson's *Anderson*

¹ *My Life with the Eskimo*, chap. xii, p. 188.

² *Ibid.*, chap. xii, p. 202.

Arctic Expedition: Preliminary Ethnological Report, published by the American Museum of Natural History in 1914, which represents a copper knife similar to the one referred to by me. Mr. Jenness claims that this type of knife "never, so far as we know, had a copper blade." He also states that he is not sure whether harpoons like the one shown in my plate ix, fig. 1, ever had copper shanks, in reference to which I would invite attention to the following direct statement in Stefánsson's *Anderson Arctic Expedition* (p. 113):

Of the tribes whom we visited, the *Kanhiryuarmit* are paramountly the makers of weapons and implements of copper. From the deposits northeast of Prince Albert Sound and from pieces of float which they pick up here and there they make long-bladed hunting knives, the ordinary half-moon shaped woman's knives, crooked knives for whittling purposes, copper rods for the foreshafts of seal harpoons, points of ice chisels, etc.

I could quote various other references, but those given seem to be sufficient to meet Mr. Jenness's undue criticism.

DONALD A. CADZOW

DENTAL DECORATION

MY attention was recently attracted by an article in the *American Anthropologist* for 1913 (vol. 15, no. 3) entitled "Precolumbian Decoration of the Teeth in Ecuador" because I happened to be aware of certain curious fashions of dental decoration formerly prevalent in the Philippines. It turned out that the Ecuadorian and Philippine fashions are practically identical. But in the article it is stated, "So far as we are aware, the type of decoration represented by the insertion of stone or metal into the teeth in the manner about to be described is not found outside of ancient America." I realize that after so many years it is quite possible that someone else may have called to your attention, or to that of the author of the article, the fact that similar practices have been common in the Orient also, but even then it is not probable that he would have happened to run across the same references to it in literature.

The following are from *The Philippines*, by Blair and Robertson:

They color their teeth and bore them through from side to side, placing pegs of gold in the holes.—Vol. 2, p. 223, "Letter from Sevilla." (I suspect this means "from the front side to the back side" and moreover, that the "boring through" is perhaps an error.)

They used to, and do even yet, insert gold between their teeth as an ornament. They all cover their teeth with a varnish, either lustrous black or bright red. . . . From the edge to the middle of the tooth they neatly bore a hole, which they afterwards fill with gold, so that this drop or point of gold remains as a

shining point in the middle of the black tooth.—Vol. 12, p. 186, "Chirino Relation." (This sounds like a description of the little disks the Ecuadorians inserted close to the lower edge of the incisors.)

In the upper row, they make a little covering which they fill with gold, which shows off to advantage on the black or red background of the polish.—Vol. 29, pp. 287-8, "Diego de Bobadilla's Relation."

They also, especially the chief women, adorned the teeth with gold, with exquisite beauty.—Vol. 40, p. 327, "San Antonio Cronicas."

Finally, the following from the *Vocabulario de la Lengua Bicol*, by Fr. Marcos de Lisboa, the first edition of which was published in 1754 and the second in 1865, though it was written between 1690 and 1620:

PASAC. Ornamentation of small pieces ("granitos") of gold, brass, or other metal, inserted in something, as for instance in a swordhilt, etc.

PASAC. Gold driven into, or wrapped about, the teeth, as was the use here anciently.

The word *pasak* exists in various Philippine languages in such senses as "peg," "plug," "wedge," "inserted piece," etc.

I have seen references to the practice of making inserts in the teeth in works about other parts of the Indo-Malayan region but can not recall where. If I am not much mistaken, there are some skulls in the collections of the Philippine Bureau of Science showing evidences of inlays in the teeth but, as far as I know, nothing has been published here about them.

E. E. SCHNEIDER

BUREAU OF FORESTRY,
MANILA, P. I.

BRIEF COMMUNICATIONS

ANTHROPOLOGY IN NEW ZEALAND, AUSTRALIA, AND JAPAN

THE accompanying information regarding the institutions and activities of anthropologists in New Zealand and Japan is abstracted from the *Proceedings of the Pan-Pacific Scientific Congress* held in Honolulu, August, 1920, the section on New Zealand having been prepared by Mr. H. D. Skinner, Lecturer in Ethnology in the University of Otago, and that on Japan by Dr. N. Yamasaki, Professor of Geography in Tokyo Imperial University. The Australian notes were contributed by Dr. Frederick Wood-Jones, Professor of Anatomy at the University of Adelaide.

New Zealand

A. Physical Anthropology

1. Osteology. A large number of osteological measurements have been recorded in different scientific journals, but the only work on any considerable amount of material is that of the late Professor J. H. Scott, who gives measurements of eighty-three skulls, and of a much smaller number of body and limb bones. In the thirty years which have passed since Professor Scott's research, a large amount of osteological material has been collected, especially in the Anatomical Museum of the University of Otago, but no attempt has been made to work it up.

2. Bodily Measurements of Living Subjects. The only work of this nature is that recently undertaken by Dr. Peter Buck, himself of Maori descent. This research promises to be of the very highest importance.

B. Cultural Anthropology

1. Sociology. Outstanding in this field is the work of Mr. Elsdon Best, who, coming late into the field, has far surpassed all other workers in the volume and value of the material he has collected. There is still scope for intensive work among the tribes not touched by Mr. Best, especially those of the Taranaki and Whanganui district, and of the peninsula north of Auckland. Mr. H. Beattie has recently collected with unexpected success among the scattered remnant of Maori in South Island. Mr. S. Percy Smith, doyen of New Zealand anthropologists, has recorded an amount of traditional material unequalled by any other worker in the Pacific, but it is unlikely that any considerable amount of new traditional material will become available in the future.

2. Linguistics. In this field, three generations of the Williams family are preeminent, and no great advance, in amount at any rate, is likely to be made on the fourth edition of the Maori Dictionary, edited by Archdeacon Herbert Williams. There remains, however, much work to be done on Maori dialects, for which research a good deal of material is still available in the spoken language, and in manuscripts in libraries and private hands. The importance of work in this field is indicated by the fact that the phonetics of the Kai-tahu dialect differ from the phonetics of dictionary Maori more than do the phonetics of Easter Island. The collection of phonographic records of songs and speeches has been begun by Mr. J. McDonald of the Dominion Museum.

3. Material Culture. Though in this field, as elsewhere, material is rapidly disappearing, a great amount of profitable collecting may still be done by the right kind of worker. Almost any middle-aged Maori can give information never before recorded regarding fishing, fowling, and similar aspects of the life of his tribe. Considering the inherent attractiveness of this kind of material and the excellence of Maori craftsmanship and decorative art, it is remarkable that so little information about it has been collected. Outstanding researches are those of Mr. Best on the working of stone, of Dr. Buck on weaving, of Archdeacon Williams on the Maori house, and of Mr. Downes on eeling. Mr. Anderson's record of string games should also be noted.

C. Present Position of Anthropology in New Zealand

Work in the past has been sporadic and of very varying quality. The chief encouragement to research has been the existence of the Polynesian Society which, through its journal, edited for thirty years by Mr. Percy Smith, has guaranteed the rapid publication of original work. The same function has been performed, but to a lesser degree, by the New Zealand Institute, through its *Transactions*, and during the past three years by the *New Zealand Journal of Science and Technology*.

The institution by the University of New Zealand of a Certificate in Anthropology has been followed by the appointment of a Lecturer in Ethnology in the University of Otago, and it is hoped that the three remaining colleges affiliated with the University of New Zealand will also undertake the teaching of the subject. The University of Otago has supported field-workers for brief terms among the South Island Maori and at the Chatham Islands. The New Zealand Institute has also aided the former work.

Only one museum has thus far carried out anthropological work on any scale. Members of the staff of the Dominion Museum have in

recent years made some of the most notable of all contributions to the study of Maori ethnology. Other museums have confined their activities to making ethnographic collections, but there is now a reasonable prospect of some of them taking up field-work of other kinds.

The New Zealand Institute makes grants to research workers.

From this brief survey it will be seen that sporadic work by individuals is slowly yielding to systematic work by three classes of institutions—the university colleges, the museums, and the New Zealand Institute. The intensification of work by all three is prevented solely by lack of funds.

Nothing has been said in this report about field-work in the New Zealand dependencies in the Pacific. Our obligations in this regard are obvious.

Australia

Australia has no federal bureau nor any institution in any individual state that maintains a properly staffed and equipped department for the conduct of anthropological work.

The establishment of a chair of anthropology in one of the large universities having teachers and research facilities is a great desideratum. The writer is certain that many competent young men would take up work in anthropology were a chair established in one or more Australian universities. In the museums of Perth, Adelaide, Melbourne, and Sydney there is a large amount of anthropological material, both physical and cultural. There is also available a large amount of anthropological material in private collections. All of this should be worked over along modern scientific lines. More especially is this want felt in regard to the examination of the skeletal remains of the peoples of Australia and the surrounding Pacific regions.

The museums mentioned above are not directly attached to the universities and it is much to be desired, pending the establishment of chairs in anthropology, that coordination of effort be brought about by the appointment of university teachers interested in anthropology as honorary curators of anthropology in the museums.

Japan

The Anthropological Institute and Professorship of Anthropology in the College of Science in the Imperial University of Tokyo were established in 1892. From that year until 1912, Dr. S. Tsuboi was Professor of Anthropology, but since that date the position has been vacant. However, there are two lecturers: R. Torii, S. Ishida. The rich collec-

tions of anthropological, ethnological, and archaeological specimens from all parts of Japan, China, Mongolia, Manchuria, the South Sea Islands, etc., are in charge of the curator, A. Matsumura. The reports of the principal explorations conducted have been published in the *Journal of the College of Science*, in English or French. Reports on Formosa, China, Mongolia, Manchuria, and the Kurile Islands have been published by R. Torii and on the Caroline Islands by A. Matsumura.

In the College of Literature, S. Harada is the Lecturer in Archaeology.

At the Imperial University of Kyoto there is no chair of anthropology, but B. Adachi, Professor of Anatomy, is a lecturer, and K. Hamada is Professor of Archaeology. Prof. Hamada has published the following in English: *Stone Age Relics of Ko*, *Ancient Caves in Higo*, etc.

No professorship in anthropology is maintained at the Imperial University of Sendai, but the College of Science has a Professor of Anatomy, K. Hasebe. H. Matsumoto is Lecturer in Anthropology. The College has many good collections from northern Japan, while a great shell-heap on an island of the Matsushima group is reserved for study.

In the department of history of the Imperial Museum of Tokyo there are excellent collections, in charge of the department director, Prof. Y. Miyake; the curator and his assistants are K. Takahashi, Wada, and Goto.

The Anthropological Society of Tokyo was established in 1886. Its present membership is 313. The Society meets monthly at the Anthropological Institute of the Imperial University, except during July and August. It has published since its organization thirty-five volumes, in 394 numbers, of the *Journal of the Tokyo Anthropological Society*. The presidency is vacant; there are twenty councilors whose acting director is Prof. R. Koganai; the secretaries are R. Torii, S. Ishida, and A. Matsumura.

CLARK WISSLER

AN EXAMPLE OF ESKIMO ART

HORACE R. BURRITT of Portland, Oregon, a Yale graduate, recently presented to the Yale Museum a fine example of aboriginal carving in ivory (fig. 73). The only data he could give respecting the provenience of the specimen was that it came from Nome, Alaska, and that he secured it from a trader. When it came to Burritt, the ten holes were all filled with tundra débris (moss).

The piece is stained to a rich tobacco brown relieved here and there by lighter patches. The stain penetrates deeply. That the ivory had already taken on its present color before the carving was done seems evident from the fact that the cutting on the two flat sides of the larger end encroached upon one of these lighter patches. That the carving is not of recent date is proved by the fact that the patina is just as pronounced in the deepest grooves as it is elsewhere; also by the fact that the surface flaking, due to decay, has removed the incisions. Moreover the destruction of the design is general on the side not shown in the illustration, although enough remains to indicate that the carving was bilaterally symmetrical.



FIG. 73.—An example of Eskimo art: probably the handle of a dog-whip.

The author has failed to find in the literature on the subject or in the museums a specimen comparable with this, but has learned enough to satisfy himself as well as others that the piece in question is a handle for a dog-whip. The slit near the larger end and the cutting away of the ivory between it and the end were for the attachment of the whip-lash. The animal head at the opposite end served as a handhold.

The shaft is carved to represent two fish heads with wide-open mouths, facing in the direction of the lash. In one, the lower jaw is longer than the upper; in the other, it is much shorter. Near the tip of each lower jaw, and in a median plane, is a single hole not unlike the paired holes representing the eyes. Between these lower jaws the space is filled by an upper jaw and pair of eyes for which there is no corresponding lower jaw. All ten holes average about 7 mm. deep and are round-bottomed. All the incisions, even the circular ones, are free hand and done with a degree of skill and steadiness of hand that would be difficult to find excelled in any age.

In the American Museum of Natural History, New York, there are two whip handles made by the Plains Indians which resemble this specimen except in material and workmanship. The length is about equal in all three; and the slit for the lash is of the same shape and located in the larger end. But the two whip handles from the Plains are not decorated.

GEORGE GRANT MACCURDY

A KITE-FLYING INVOCATION FROM HAWAII

THE most interesting feature in connection with the ancient sport of kite-flying in Hawaii was the invocation to the god Hilo, which always accompanied it and by which it was believed the strength of the wind might be either increased or diminished.

This Hilo was known in most of the Polynesian groups as the patron of thieves and as a most famous voyager and robber. The name appears in the various dialects as Whiro, Hiro, Iro, or Hilo. It is pretty well agreed that he was a real historical character, born, according to For-
nander, about the year 1400 A.D. In the Maori tradition, the scene of his early adventures is laid in Hawaiki, that mystical land from which the race migrated to New Zealand. He quarreled with and outwitted his brother Hua, whose son he brutally murdered. This led to a great fight between the factions of the two brothers, ending in the death of Hua's other children and most of his people in battle. Whiro is very frequently mentioned in the ancient incantations of the Maori, sometimes as an ancestor, but more frequently as a thief; he is sometimes alluded to as stealing away human beings. There is no doubt that at the time New Zealand was colonized he had become one of the most dreaded of the Maori gods.

William Ellis says: "They (the *akua Hianau po*, or 'Nightborn gods') were probably men who had excelled their contemporaries in nautical adventure or exploits and were deified by their descendants. Hiro is conspicuous among them, although not exclusively as a god of the sea. The most remarkable accounts are given in their tales of his adventures, his voyages, his descent to the depth of the ocean while the god of the wind raised a violent storm to destroy a ship in which his friends were voyaging. Destruction seemed inevitable, but they invoked his aid and a friendly spirit entered the cavern in which he was reposing, roused him from his slumber, and informed him of their danger. He rose to the surface of the water, rebuked the spirit of the storm, and his followers reached their destined port in safety."

As a being of such magic power over wind and wave, he was invoked by the kite-flying youth of Hawaii in the following words:

"Pa mai, pa mai
Ka makani nui o Hilo.
Waiho aku ka ipu lillii,
Ho mai ka ipu nui."

Blow, blow, ye strong winds of Hilo,
Put away the little wind gourd,
Bring hither the great wind gourd.

Again, when a milder breeze was desired, they would vary the invocation thus,

"Pa mai, pa mai
 Ka makani nui o Hilo.
 Waiho aku ka ipu nui,
 Ho mai ka ipu liliu."
 Blow, blow, ye strong winds of Hilo,
 Put away the great wind gourd,
 Bring forward the little wind gourd.

JOSEPH S. EMERSON

A NOTE ON TWINS

IN Laguna, N. M., twins are considered a misfortune. So much so in fact, that a woman is not told she is giving birth to twins for fear she might in some way interfere with the birth of the second child.

It is believed that twins are due to some evil person—a witch—with whom the prospective mother might unwittingly have quarrelled or whom she had offended in some way, during pregnancy.¹ As soon as the twins are born, *kcurna wawa*,² a root, is burned constantly in the middle of the room. The smoke from this will drive away the witch.³

To further counteract the evil influence of the witch, the twins are taken to the medicine man (*tcailyuni*). He gives each twin a teaspoonful of the urine of their mother that has been preserved for a week. Unless this is administered the twins will continue to be an evil influence in the community—"they will know all and become witches themselves."

¹ The Zuñi believe a woman will have twins who eats the wafer bread her husband has taken with him on a deer hunt and brought back home, for the deer have twins. The bread, however, may be eaten with impunity if she passes it four times around the rung of her house ladder. It is also believed that a woman who eats venison and mutton or venison and beef at the same meal will also be the mother of twins. See E. C. Parsons, "Zuñi Conception and Pregnancy Beliefs," *Proceedings, XIX International Congress of Americanists*, Washington, 1915, p. 381.

At Hopi, twins are believed to be due to intercourse in the day time, one child begot by the man, the other by the sun; in Pueblo Indian folk tales, twins are begot by the sun in several cases.—Unpublished note by E. C. Parsons.

² Father Noel Dumarest (Notes on the Cochiti, N. M., *Memoirs of the American Anthropological Association*, Vol. VI, No. 3, pp. 153, 154) refers to the "katshrana," an herb which is kept on the person of an invalid. This terrifies the witches and with it in the house they become powerless.

³ At Cochiti a fire is lighted at birth and not extinguished for four days. During this time the man guards the lying-in woman for fear the witches may carry off the child and make a witch of him. (Dumarest, "Notes on Cochiti, N. M.")

The use of urine in this instance is another case of inoculative magic,¹ for a witch may make two balls of earth wet by urine and roll the balls in the direction of the woman who has urinated.² Since the mother may be bewitched by her urine, the twins may be cured by it.

My informant, Dzaid'yuwi of Laguna, one of twin sisters, told me that her mother had not known of this preventative measure until she and her sister were quite old. Before they were given the medicine they hurt whoever crossed their path. If they only touched a person, a large bump would immediately form. However, after drinking the medicine, its potency caused the evil spirit to leave them. It is also believed that if a pottery jar in the making will not burn, a twin who is near is the cause. A twin passing an oven must blow upon it hard or spit three times,³ otherwise the bread will not bake.

Mrs. Parsons has described the ceremonial treatment of a child by the medicine man.⁴ For twins the routine is very similar. However, instead of one *Iyetiku*, the most sacred symbol or fetich of the Keresans, there are two, one for each child. These are symbolic of the *Naiya* (mother) *Iyetiku*, the deity within the earth, and Mrs. Parsons described it as an ear of corn wrapped in unspun cotton and set in a little buckskin cap. These two ears are placed on either side of a bowl of medicine and the *taiyani* sprinkles a row of meal with his arrow point, from the door to each *Iyetiku*. It is by these paths that the *Kopishtaiya* or benevolent spirits enter. The *taiyani* then offers a prayer that the children may have everything they will need and will always remain in good health. He then gives the mother a drink of the medicine in the bowl four times. This medicine is called *madzi-wawa* (blood medicine). It is a tea made of the root of *erigonum* and is administered also at the menstrual period and before and after confinement.

ESTHER SCHIFF

¹ Elsie Clews Parsons, "Zuñi Inoculative Magic," *Science*, n. s., vol. XLIV, pp. 469-470, 1916.

² Elsie Clews Parsons, "Mothers and Children at Laguna," *Man*, Vol. XIX, p. 37, London, 1919.

³ These are common Pueblo Indian rites of exorcism.

⁴ Elsie Clews Parsons, "Mothers and Children at Laguna," *Man*, Vol. XIX, p. 37.

ANTHROPOLOGICAL NOTES

CONSIDERABLE interest has been excited by the publication by Prof. Eugene Dubois, the discoverer of *Pithecanthropus erectus*, of an account of fossil human remains found in the same general region a year before those of *Pithecanthropus*. His attention having been attracted by the discovery of a fossilized human skull in the Wadjak district of Java, some sixty miles to the southeast of the site of his later and more famous find, he instituted excavations which resulted in unearthing fragments of the jaws and cranium of a second individual in the same state of mineralization. The most important feature of these remains is their pronounced Australoid character which indicates that a people similar to the primitive inhabitants of Australia was formerly represented in Java. The skulls differ from Australian skulls principally in the great development of the palate, and general large measurements.

The anniversary meeting of the Royal Anthropological Institute of Great Britain and Ireland held January 25, 1921, marked the completion of the fiftieth anniversary of its existence. It came into being in 1871 through the fusion of the Ethnological Society, founded in 1843, and the Anthropological Society, founded in 1863 as the result of a fission in the former society. Early in its career the Institute underwent considerable fluctuations, but in 1883 an increase in membership began which has been maintained steadily ever since. At the annual meeting in January, 1920, a total membership of 520 was reported. Its two publications, *The Journal of the Royal Anthropological Institute of Great Britain and Ireland* and *Man*, are standard sources of information for anthropologists in all parts of the world.

WE note with regret the death of Professor Rudolf Pösch of the University of Vienna, which occurred on March 4, 1921. A memorial meeting was held on May 11th. Dr. Pösch was best known for his work in physical anthropology. He organized somatological investigations of war prisoners taken by the Austrians. Dr. R. Thurnwald has published an obituary notice with bibliography.

DR. W. D. WALLIS has been appointed to lecture on anthropology in Reed College, Oregon.

FATHERS W. SCHMIDT and W. KOPPERS have written a comprehensive work expounding their conception of culture-historical ethnology. Its publication has been delayed by post-bellum conditions.

IN Copenhagen there has recently been produced the first grand opera with Eskimo characters and setting.

M. H. BEUCHAT's *Manuel d'archéologie américaine* has been translated into Spanish by Domingo Vaca.

THE *Institut international d'Ethnographie* and the *Société des Traditions populaires* have merged and will henceforth publish a single journal, viz. the *Revue d'Ethnographie et des Traditions populaires*.

IN March and April, Messrs. W. K. Moorehead and J. B. Thoburn travelled through the Upper Canadian valley and the Panhandle of Texas and eastern New Mexico, continuing the explorations begun the year before of which an account was given in this journal. Their expedition confirmed in general the conclusions of the former trip to the effect that a new field in American archaeology had been opened and that the remains extended through a territory measuring approximately 250 by 150 miles.

IN April Dr. John C. Merriam, President of the Carnegie Institution of Washington, D. C., delivered a lecture at the State University of Iowa entitled "Recent Researches on the Antiquity of Man in California."

DR. EDWARD A. SPITZKA, formerly Professor of Anatomy at Jefferson Medical College, Philadelphia, has donated to the U. S. National Museum his collection of brains of distinguished persons.

DR. WM. CURTIS FARABEE, President of the American Anthropological Association, has been elected a corresponding member of the National Academy of History, Ecuador.

DR. LIVINGSTON FARRAND, formerly Professor of Anthropology at Columbia University and recently Chairman of the Executive Committee of the Red Cross, was installed as President of Cornell University on October 20.

THE lectureship established in London to commemorate the work of Moncure Conway was held this year by Dr. A. C. Haddon, who selected as his subject "The Practical Value of Ethnology."

DR. C. T. LORAM, of the Natal Education Department, was President of the section of anthropology and philology at the Durban meeting of the South African Association for the Advancement of Science, held at Durban, July 11-16.

At the invitation and in the company of Mr. Northcott, the owner of Luray Caverns, Virginia, Dr. A. Hrdlička of the U. S. National Museum, visited these caverns in June for the purpose of examining and removing certain bones enclosed in stalagmite and believed to be human which formed one of the attractions of the caverns for upwards of thirty years. These remains, which in fact proved to be parts of a human skeleton, though lacking unfortunately all of the skull with the exception of a portion of the lower jaw, were donated to the National Museum.

DR. ROBERT H. LOWIE, formerly Associate Curator in the Department of Anthropology at the American Museum of Natural History, New York, and an Associate Editor of the *American Anthropologist*, is now Associate Professor of Anthropology at the University of California.

At the meeting of the San Francisco Society of the Archaeological Institute of America held in Berkeley, Calif., in conjunction with the meeting of the Pacific Division A. A. A. S. in 1921, the following were among the papers read: On Abstraction in Primitive and Modern Art, by P. L. Faye, University of California; Geographic Environment and Culture, by W. D. Wallis, Reed College, Portland, Oregon; The Structure of Tongan Society, by E. W. Gifford, University of California; Recent Investigations on the Racial Type of the Polynesians, by L. R. Sullivan, American Museum of Natural History, New York; Obsidian Quarries of Sonoma, by Llewellyn L. Loud, University of California. The following papers were read by title: Preliminary Mental Studies of the Children of Hawaii, by E. B. Hoag, Pasadena; Tongan Material Culture, by W. C. McKern, Bernice Pauahi Bishop Museum, Honolulu; The History of Religion in Native California, by A. L. Kroeber, University of California; Cultural Relations of the Great Basin Shoshoneans, by R. H. Lowie, University of California.

MR. B. S. GUHA, a graduate student of Harvard University, has been engaged in special work for the Bureau of American Ethnology at Towaoc, Colo., and Shiprock, N. M.

At the end of August Mr. John P. Harrington of the Bureau of American Ethnology resumed field work in California.

A museum is being erected at Castine, Me., by Dr. J. Howard Wilson and his mother, Mrs. J. B. Wilson, which is to contain, besides objects of later historical interest, a large collection of the artifacts, utensils, weapons, etc., of prehistoric man both in America and elsewhere.

DR. J. WALTER FÉWKES, Chief of the Bureau of American Ethnology, has been elected a member of the Indiana Archaeological Society.

THE University of Vienna has conferred an especially created honorary title upon a small number of individuals who had aided in relieving the material distress of the university during the past few years, among them Dr. Franz Boas, Professor of Anthropology in Columbia University.

BARON R. VON HÜGEL has resigned the curatorship of the Museum of Archaeology and Ethnology of the University of Cambridge and Dr. A. C. Haddon, Christ's College, has been appointed Deputy Curator.

DR. GEORGE FREDERICK WRIGHT, Professor Emeritus of the Harmony of Science and Religion at Oberlin College, Ohio, widely known for his contributions to geology, especially the geology of the glacial period, and prominent in former years in discussions in anthropological circles on questions relative to the antiquity of man, died at Oberlin on April 20, aged eighty-three years.

DURING the present academic year courses on "Races and Race Problems," "The Diffusion of Civilization," and "Social Theory" are being conducted by Dr. A. A. Goldenweiser at The New School for Social Research, New York City.

DURING August Dr. Frederick Starr gave a series of illustrated lectures on Mexico at the University of Chicago.

IN a lengthy communication to *Science* for Aug. 19, Prof. Marshall H. Saville of the Museum of the American Indian announces the discovery, near the Ecuadorean coast, and in the province of Esmeraldas, of a human skeleton which he believes constitutes "the oldest burial thus far found in South America."

THE AMERICAN SCHOOL IN FRANCE FOR PREHISTORIC STUDIES has completed its first term's work in Charente, Dordogne, Corrèze, and the French Pyrénées. Professor George Grant MacCurdy of Yale University, Director of the School, has returned to Paris and, with Mrs. MacCurdy, is at Hotel Mont-Fleuri. Before leaving Charente, Professor

MacCurdy was elected a Corresponding Member of the Société Archéologique et Historique de la Charente.

DR. H. J. SPINDEN was the Director of the Peabody Museum Expedition to Middle America for 1921. He visited the hitherto unexplored region of southern Yucatan finding a large number of new sites of archaeological interest.

DR. A. M. TOZZER has been promoted from the position of Associate Professor of Anthropology at Harvard University to that of Professor of Anthropology.

THE annual Southwestern expedition of the Peabody Museum was in charge of Mr. S. J. Guernsey. He was accompanied by three Harvard students specializing in Anthropology, George Valliant, Oliver La Farge, and William Jackson. The work in the Navaho Indian Reservation in Arizona was continued.

THE ANTHROPOLOGICAL SOCIETY OF PHILADELPHIA held the first meeting for this season at the University of Pennsylvania, on November 2, the speaker for the occasion being Dr. T. T. Waterman of the Museum of the American Indian, New York. The Society now numbers 48 members. The officers for 1921-2 are: President, Dr. F. G. Speck; Vice-President, Dr. J. W. Harshberger; Secretary-Treasurer, Mr. E. P. Wilkins. The outlook for the winter is very good and many well-known ethnologists are scheduled to address the Society.

THE Knud Rasmussen Danish expedition, the object of which is "to explore and map the archipelago between Greenland and the American continent, and also to investigate the migrations of the Eskimo, their folk-lore, and cognate subjects," left Godthaab, on the southwestern coast of Greenland, on September 7.

MR. M. W. STIRLING, a graduate of the University of California, where he was teaching fellow in the Department of Anthropology, has been appointed Aid in the Division of Ethnology of the U. S. National Museum.

VARIOUS members of the Bayard Dominick expedition to Polynesia have returned to Honolulu or the United States. Dr. E. S. Handy, now stationed at the Bishop Museum, is working up observations made in the Marquesas, where he and Mrs. Handy paid special attention to

features of economic, social, and religious culture. Messrs. E. W. Gifford and W. C. McKern, who jointly investigated the Tonga Islands, are both in California, where Mr. Gifford has given a course in Polynesian ethnography at the University. Mr. Robert T. Aitken, whom ill-health compelled to seek medical treatment in Tahiti, has resumed work in the Austral Islands. Mr. Ralph Linton has accepted an appointment in the Field Museum of Natural History.

DR. H. J. SPINDEN has been appointed Curator of Mexican Archaeology and Ethnology in the Peabody Museum, Harvard University, and Philip A. Means has been appointed Associate in the same institution.

NATURE (June 30, 1921) in noting that the tercentenary of the death of Thomas Harriot was to occur on July 2 gives an interesting sketch of his life. He was famous as a mathematician and astronomer, but is best known to American anthropologists for his sketches made in connection with the Raleigh expeditions to Carolina, he having been employed as the surveyor for the attempted colony.

SIR ARTHUR KEITH, F. R. S., Conservator of the Museum and Hunterian Professor of the Royal College of Surgeons, England, lectured at Johns Hopkins University, Baltimore, October 5, 6, and 7, on "The Differentiation of Modern Races of Mankind in the Light of the Hormone Theory."

PROFESSOR R. J. TERRY, of the Department of Anthropology of Washington University, St. Louis, has been appointed Anthropologist at the Barnes Hospital and St. Louis Children's Hospital.

THE members of the Australian National Research Council representing Anthropology are: Prof. R. J. A. Berry, Mr. C. Hedley, Rev. John Matthew, Mr. S. A. Smith, Sir Baldwin Spencer, and Prof. F. Wood-Jones. Sir Baldwin Spencer is one of the Vice-Presidents of the Council.

THE presidential address of Sir Baldwin Spencer, at the meeting of the Australian Association for the Advancement of Science, held at Hobart last January, was devoted to the intricate problems of Australian ethnology. The speaker suggested that the great multiplication of dialects might have been due to the progressive desiccation of the country rendering it necessary for various bands to isolate themselves from one

another in districts less exposed to drought. He thought that the original immigrants probably entered Australia at the northeast in Pliocene or very early Pleistocene times, but believed Dr. Rivers's theory that the later culture had been modified by a gradual infiltration of seafaring people starting from many different points on the coast untenable.

DR. TRUMAN MICHELSON of the Bureau of American Ethnology returned to Washington in October after three and a half months' field work among the Fox Indians of Iowa.

DR. A. M. TALLGREN, whose important work on Siberian archaeology was reviewed in this journal by Dr. Laufer (vol. 21, p. 78 seq.), has accepted a professorship at the new University of Dorpat.

DURING the past summer the President of the American Anthropological Association, Dr. Wm. Curtis Farabee, attended the Centennial Celebration at Lima, Peru, as member of a special mission appointed by President Harding. All members of the Mission were elected to the ancient order "El Sol de Peru." The Lima Scientific Society held a special meeting in Dr. Farabee's honor and elected him a Corresponding Member.

THE death is announced of Emile Houzé, Professor of Anthropology at the University of Brussels and at the École d'Anthropologie of that city.

PROF. J. DYNELEY PRINCE of Columbia University, who has long been an active student of Algonkian philology, particularly of the dialects of the Wabanaki group, is U. S. Minister to Denmark.

AT the eighth annual meeting of the Indian Science Congress an independent section of Anthropology was revived. Sarat Chandra Roy, Editor of the new journal, of which two numbers have so far reached America, *Man in India*, was elected President. Seventeen papers on anthropological subjects were presented at this session.

THE SECOND INTERNATIONAL EUGENICS CONGRESS was held at the American Museum of Natural History, New York City, September 22 to 28. A Eugenics Exhibit, formed in connection with this, was open until October 21.

AT the meeting of the Section of Biology of the New York Academy of Sciences held on Nov. 14 Prof. H. F. Osborn spoke on "Recent Dis-

coveries in the Pre-History of Man'' and Prof. William F. Gregory gave "A Critique of Recent Papers on the Origin of Man."

DURING the past season Mr. Neil M. Judd, Curator of American Archaeology in the U. S. National Museum, spent five months in the field as Director of the National Geographic Society's Pueblo Bonito Expedition. A unique undertaking introduced—for the first time it is believed—in connection with this exploration, is an annual conference of scientists of different branches, through whose cooperation it is hoped that the problems which the research discloses may be more rapidly and more satisfactorily solved. The first of these conferences occurred late in August and was attended by several archaeologists and agriculturists.

MISS FRANCES DENSMORE returned to Washington late in October but left on the eleventh of the following month for Minnesota from whence she will proceed somewhat later to Arizona to spend the winter in the study of Papago and Pima music.

MR. W. E. MYER, a volunteer collaborator in the Bureau of American Ethnology, returned to Washington Nov. 12 from archaeological work on the mounds of the middle west.

ON Nov. 15 Mr. Sylvanus G. Morley delivered a lecture in the Assembly Room of the Carnegie Institution, Washington, D. C., on "The Chronology of the Ancient Maya." Mr. Morley lectured in Toronto, Ontario, Nov. 12, and again in Washington, before the National Geographic Society, on Dec. 2.

OCT. 23, 1921, Mrs. Paul Burlin, as Natalie Curtis well known to anthropologists for her studies and renderings of the music of primitive peoples, was killed in Paris in an automobile accident.

MESSRS. WALDEMAR BOGORAS, WALDEMAR JOCHELSON, and LEO STERNBERG, who have done such important work for the American Museum of Natural History, are holding administrative positions in the Ethnographical Museum of the Russian Academy of Sciences in Petrograd. Mr. Bogoras is at the same time Professor of Siberian Languages at the University of Petrograd. Recently he has organized an expedition for the exploration of the Arctic tribes of European Russia, west of the Ural Mountains. One party is wintering on the lower Petchora.

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ABORIGINAL TOBACCOS

BY WILLIAM ALBERT SETCHELL

ACCORDING to De Candolle in his *Origin of Cultivated Plants*,¹ somewhat over forty of the plants now generally cultivated came from the Americas, some of them having been introduced into Europe very soon after the discovery of the "new continent" by Columbus. This has been regarded as being true particularly of maize, potatoes, and tobacco. There have not been wanting claims as to other origins for many of these supposedly American cultivated plants and the tobaccos have frequently been under suspicion. The most careful investigations, however, have tended only to confirm the idea of the non-existence of any species of tobacco used for smoking, snuffing, or chewing outside the confines of the American continents. The latest writer to claim a non-American origin for tobacco, as well as certain other cultivated plants of supposedly American origin, is Leo Wiener.² Professor Wiener devotes ninety pages of his book to a consideration of tobacco, chiefly from the point of view of its various names. His conclusions appear to be that the cultivated tobacco originated in Africa and was introduced thence into the Americas by Negro slaves imported by the Spaniards. The linguistic evidence brought forward by Professor Wiener seems to one unacquainted with the value of such evidence as to origins and migrations of peoples, plants, etc., to be far-fetched and

¹ *Origin of Cultivated Plants*, in *Internat. Sci. Series*, vol. 48, New York, 1885.

² *Africa and the Discovery of America*, vol. 1, Philadelphia, 1920.

often trivial. The discussion of this portion of Wiener's claim has been taken up by one well qualified to estimate its worth.¹

The botanical evidence, however, has not been dealt with to any extent by Wiener, and, in fact, he does not seem at all aware that there is any complexity to this side of the question he attempts to settle so readily and so smugly. While we are by no means certain as to the exact sources of the two species of *Nicotiana* most commonly used for smoking, viz., *Nicotiana Tabacum* and *N. rustica*, all evidence in our possession is strongly against the assumption of a non-American origin. It seems to the botanist that *Nicotiana Tabacum*, for example, is much more likely to have been carried from Brazil or the West Indies, where its culture was early widespread, if not aboriginal, to Africa, by the very agents who procured the Negro slaves for American use. In doing so, it seems very likely that the Brazilian or other American names may thus have been transferred early to Africa along with the plants to which they belonged, and have become firmly and extensively incorporated into African native languages. However this may or may not be, the strongest botanical evidence for the American origin of the tobaccos, as used by man, is the existence of a large number of species of *Nicotiana*, undoubtedly native to the Cordilleran ranges, extending from the State of Washington in the United States of North America to the central portions of Chile in South America. The only species of *Nicotiana* which are undoubtedly extra-American are two, viz., *N. suaveolens* and *N. fragrans*, natives of the Australian region, closely related to certain Chilean species, and never used for smoking or similar purposes before the advent of the white man to the countries where they are known to occur.

Of the somewhere in the neighborhood of seventy species of *Nicotiana* generally recognized, there are to be found in North America, either growing wild or in aboriginal cultivation, some fourteen species. Of these fourteen North American species, I have evidence of the use of nine species or varieties by different tribes of American Indians at the present time. At present they are used

¹ Cf. R. B. Dixon, *American Anthropologist*, vol. 22, no. 2, April-June, 1920, especially pp. 179-181, and "Words for Tobacco in American Indian Languages," *ibid.*, vol. 23, no. 1, pp. 19-49.

only, or at least chiefly, for ceremonial purposes, their use for smoking generally having been superseded by the trade-tobacco early introduced by the white traders. It is to the close association of tobacco with the religious and social observances of the various tribes of North American Indians that we owe the continuation of the use, and particularly of the cultivation, of aboriginal tobaccos and the opportunity of obtaining first-hand information as to the species employed as well as to the ceremonies connected with their use. For somewhat over fifteen years I have been collecting information on the subject of the species employed and have importuned every anthropologist who was luckless enough to come into my circle of acquaintances to assist in obtaining seed of any possible species of *Nicotiana* still found to be in aboriginal use. The result has exceeded my original expectations by far, and a number of species which I had imagined to be beyond further proof than mere mention of their employment by one tribe or another have been found still in use and either cultivated or collected wild. Of these, seed has been procured in practically all cases, and I have been able to grow it in the botanical garden at the University of California and assure myself as to the identity.

The use of narcotics is found to be general wherever they are readily available and it is remarkable how quickly and how widely the use of a narcotic will spread when once introduced. This has been particularly the case with tobacco after the discovery of America, as Tiedemann¹ has so convincingly shown. The extent of the use of the narcotics, tobacco and coca, in the Americas previous to 1492 is well delineated by Wissler.² Wissler's chart distinguishes between the areas where tobacco was chewed and those where it was smoked, and it even distinguishes between the areas where the tubular or elbow pipes were smoked and those where cigars or cigarettes were employed. This chart indicates that tobacco was used over the whole of both Americas with the exception of the extreme northern portions of North America and the extreme southern portions of South America. The tribes of North American Indians who were fortunate enough to dwell in a region provided with a native species

¹ *Geschichte des Tabaks*, Frankfurt a M., 1854.

² *The American Indian*, fig. 8, New York, 1917.

of *Nicotiana* seem to have learned to use it and to have paid little or no attention to its cultivation. Some such tribes, however, did burn over small areas to make the wild tobacco grow more abundantly or more luxuriantly. The tribes of North American Indians, living in areas destitute of a native species of *Nicotiana*, either cultivated some species or obtained their supply from other tribes who had a supply, cultivated or wild. The relation of the different species of North American tobacco to the various trade routes of the Indians has not as yet been investigated, but some suggestions as to these relations may become apparent as I proceed with the present discussion. When tobacco was cultivated, its planting, at least, was usually attended with more or less elaborate ceremonies.

The species of *Nicotiana* which is best and most widely known is *Nicotiana Tabacum* L. It is pink-flowered and is the only species belonging to its section of the genus. The variation within the species, however, is so very considerable that at least five subspecies may be segregated, and, superficially at least, these seem distinct enough to be considered as species. The subspecies may each be divided and subdivided again and again into a very large number of varieties and subvarieties, so that, in general, *Nicotiana Tabacum* has all the ear-marks of an old and widely cultivated plant. The cultivation of this species, in its various forms, is almost exclusive at present for the tobacco trade of all nations. It was the aboriginal tobacco of the West Indies, of the greater part of Mexico, of the states of Central America, of the United States of Colombia, of Venezuela, of the Guianas, and of Brazil. The Brazilian name of this species is said to have been "petun," and this name was very generally used for tobacco in the accounts of it in the sixteenth century. Wiener¹ thinks that this word is a corruption of the Portuguese "betume," meaning a pasty substance. It seems strange that this derivation of the name was not known, if true, to any of the writers on tobacco of the sixteenth and seventeenth centuries. The Mexican name for *Nicotiana Tabacum*, "piecelt," was also early widespread.

The origin, as well as the original sources, of *Nicotiana Tabacum*

¹ Loc. cit., p. 135.

is uncertain, since it is not known in the wild condition in any of the countries where it is under cultivation. It seems probable that it may have originated in the interior of Brazil and possibly somewhere on the lower eastern slopes of the Andes. It is very evidently a tropical species and in the tropics often becomes spontaneous, escaping from cultivation and persisting in favorable localities. Some varieties are semi-hardy in regions of little frost, but frostless and humid areas are evidently similar to its ancestral home. Edward Palmer found it in Indian cultivation in southern Arizona under the name of "Yaqui Tobacco."¹ This "Yaqui Tobacco" is referred by Gray to the var. *undulata* Sendtner. North of Mexico, however, *Nicotiana Tabacum* was practically unknown in aboriginal use.

The yellow-flowered tobacco, *Nicotiana rustica* L., was the second species of tobacco to attract the notice of Europeans and for some time almost monopolized attention. This was the first species of tobacco to be cultivated in the Colony of Virginia. It was fairly soon supplanted there, however, by a variety of *Nicotiana Tabacum* called "Orinoco," introduced, it is said, by Sir Walter Raleigh, or through his recommendation. *Nicotiana rustica* is still the home-grown species of the peasants of Central Europe and still furnishes the Syrian "Tombac" for the water-pipes of western Asia. It is a much more hardy species than is *Nicotiana Tabacum* and has been credited with being a native of the Old World. There seems to be no exact evidence, however, that this is so, and, although it has not been found in undoubted wild condition, the general supposition is that it probably originated in Mexico. It seems fairly certain that it is American and probably Cordilleran like all its near relatives of the *Rustica* section of the genus *Nicotiana*. Like *Nicotiana Tabacum*, *N. rustica* was described and figured in pre-Linnean herbals, especially in certain of those of the sixteenth century, where it was designated as the lesser or female tobacco, while *N. Tabacum* was called the greater or male tobacco.

Nicotiana rustica seems to have been cultivated and smoked by all of the Indian tribes of North America east of the Mississippi River and by most of those immediately to the west of it. The west-

¹ Gray, *Synoptical Flora of North America*, vol. 2, pt. 1, New York, 1878, p. 241.

ern boundary of its aboriginal cultivation or use is, naturally, difficult to determine with exactness, but is probably along the line of the eastern boundary of the "Plains Area" as outlined by Wissler.¹ The use of this species, then, may be supposed to have extended over the "Eastern Woodland Area" and the "Southeastern Area" of the social groups of North American Indians as classified according to their cultures. The evidence on which this supposition is based is scanty, but reasonably convincing. In the first place, we know that smoking was general over these culture areas and was held of importance as a ceremony. In the second place, Strachey, about 1610,² speaks definitely of the flower of the tobacco of the Virginian Indians as having a yellow color and otherwise as conforming to the description of *Nicotiana rustica*. It is interesting to note here that the Indian name for the Virginia tobacco was "Uppowoc," or, as Strachey wrote it, "Apooke." In the third place, the Onondaga Indians, center nation, fire-keepers, tobacco nation, and holders of the responsibility of general referendum of the Five Nations or Iroquois, still cultivate *Nicotiana rustica* as the "Sacred Tobacco" of their confederacy. I have been able to grow plants from Onondaga seed kindly furnished by Chief Cornplanter through Arthur C. Parker. W. M. Beauchamp³ mentions *Nicotiana rustica* as the species called "O-yen-kwa-hon-we," and I have seen specimens of the Onondaga plant provided by him in the Herbarium at the New York Botanical Garden. The Iroquois tradition of the origin of the tobacco plant is related by Arthur C. Parker.⁴ As stated by Esquire Johnson, an old Seneca chief, to Mrs. Asher Wright, the missionary, the squash grew from the earth directly over Earth-Mother's navel, the beans from that above her feet, and the tobacco-plant from that above her head. "Thus," he added, "it soothes the mind and sobers thought." In the fourth place, tobacco seed from the Winnebago Indians of Minnesota, furnished by Dr. Melvin R. Gilmore, yielded *Nicotiana*

¹ Loc. cit., p. 207.

² Strachey, William, *The Historie of Travaile into Virginia Brittania*, Hakluyt Society, London, pp. 121, 122, 1849.

³ Onondaga Indian Names for Plants, *Bull. Torrey Botan. Club*, vol. 16, pp. 54, 55.

⁴ Indian Uses of Maize and other Food Plants, *Bull. No. 114, New York State Museum*, 1910, p. 37.

rustica, on being grown. In the fifth place, and finally in the evidence, there occur spontaneous plants of *Nicotiana rustica* in various parts of these general areas, which seem to be remnants of earlier Indian cultivation. Possibly some of these which have been collected and recorded may have been ballast weeds or escapes from cultivation more recent than that of the Indians, but some of them seem fairly certainly to be relics of aboriginal culture. Such possible remnants of Indian cultivation are credited to Connecticut, New York, Wisconsin, Illinois, Minnesota, and Texas, in other words indicating an aboriginal cultivation of *Nicotiana rustica* extending well over the general areas to which I have assigned it. These facts, together with the general plausibility of the supposition, have led me to map out the areas of aboriginal culture for this species as I have indicated above.

The third section of the genus *Nicotiana* is called the *Petunioides*-section whose corollas are typically salverform and whose color is white, although often tinged with green, red, or purple. About twelve species or well-marked varieties of this section occur within the confines of North America or the adjacent islands, but only seven of them are at all definitely known to me as having been used by the Indians. There is a most interesting group of five species and varieties centering about *Nicotiana Bigelovii* (Torr.) Watson and one very widespread species *Nicotiana attenuata* Torr. The five species of this section of the genus which are not as yet known to have been in use by the Indians are the following: *Nicotiana acuminata* var. *parviflora* Comes. ?, in central California; *N. Clevelandii* Gray, in southwestern California, possibly used by the Santa Barbara and other tribes of coast Indians; *N. repanda* Willd., in southwestern Texas and adjacent portions of Mexico; *N. plumbaginifolia* Viv., in northeastern Mexico and crossing the Rio Grande into Texas; and *N. Stocktoni* Brandegee, on Guadalupe Island off the coast of Lower California.

The *Nicotiana Bigelovii*-group consists of three very well marked varieties of *N. Bigelovii* (Torr.) Watson, *N. quadricarvis* Pursh, and *N. multicalvis* Landl. There is such a close resemblance in so many details of habit and structure that it certainly seems probable that the five distinct genetic entities of the *Bigelovii*-group must have origi-

nated from one and the same stock, possibly through mutation, but probably also complicated by more or less hybridization. Their distribution in nature and under aboriginal cultivation reënforces this assumption with strong arguments. The three varieties of *Nicotiana Bigelovii* are found native in three separate portions of California, *N. multivalvis* was cultivated by the Indians in Oregon, Idaho, and Montana, while *N. quadrivalvis* was similarly cultivated in North Dakota. The distribution of this group runs from southern California north through the entire state of California and well into Oregon, possibly also entering the southeastern corner of the state of Washington. From Oregon, it bends eastward up along the tributaries of the Columbia River, across Idaho and the continental divide, and descends the Missouri River into Montana and North Dakota. With these ideas as to the group and its distribution, the way is made ready for a consideration of its various members.

Torrey was the first to call attention to *Nicotiana Bigelovii* which he named *N. plumbaginifolia?* var. *Bigelovii*. This was as early as 1857. In 1871, Watson raised the variety to a species and published a more complete description, as well as a good figure of it. The type specimens came from the Sierran foothills in central California and are low spreading plants, with short internodes, ascending branches, large and conspicuous white flowers, and prominent glandular pubescence turning brownish, or rusty, with age. S. A. Barrett found it in the general type region in use among the Miwok Indians and was kind enough to obtain seed for me. I have grown it in the pure line for many years and find that it retains its distinctive varietal characteristics from generation to generation. This plant, the taxonomic type of *Nicotiana Bigelovii*, occupies an area in the very center of California which is definitely limited and also separated from the areas occupied by the other varieties of the species.

The plant which has usually passed under the name of *Nicotiana Bigelovii*, however, is the tall erect variety found in abundance in the dry washes of stream-beds to the north of San Francisco Bay, from Sonoma, Mendocino, and Humboldt Counties eastward to Shasta and possibly also other counties of California. This variety, which as yet has no distinctive name, may reach a height of as much as six

feet, has long erect branches with elongated internodes, and with large flowers which are more separated than in the plants of the taxonomic type. In common with the type of the species, this tall and erect variety has a decided tendency toward a three-celled ovary and such are to be found in most well-developed plants although in a small percentage of the total number of capsules matured. Chestnut¹ states that this variety is used for smoking and also for chewing by all the Indian tribes of Mendocino County, California. Thanks to P. E. Goddard² and S. A. Barrett, I have perfectly reliable evidence that it is still used by the Hupa and the Pomo. The Hupa, at least, knew it both wild and cultivated,³ but the Pomo seem to have used only the wild plant. As to how far the use of this variety extended into Oregon I am uncertain, but I have the opinion that, towards its northern limits and beyond them, attempts were made to cultivate it, as certainly was the case among the Hupa. Northern California represents the limit of the spontaneous distribution of any coastal species of *Nicotiana* and in Oregon we find that the cultivated tobacco of certain Indian tribes was a nearly related species, or possibly derived variety, of *N. Bigelovii*, viz., *N. multivalvis* Lindl.

There can be little doubt that it was some form of the *Bigelovii*-group of the genus *Nicotiana* which was used by the Indians whom Drake encountered in 1579, when he landed on the coast of California, somewhere in the vicinity of Drake's Bay. Wiener⁴ remarks on Drake's account as follows: "That *tabaco*, first mentioned in Hispaniola, should have found its way so far to the northwest, in addition to the rest of the continent, is a *prima facie* proof that the distribution of *tobacco* follows from its first appearance under Arabic influence, from Guinea to all countries where Spanish, Portuguese, and French sailors navigated via Guinea or after having taken part in Guinea expeditions." The extreme improbability of *Nicotiana Bigelovii* having originated in Guinea and having been brought thence

¹ Plants used by the Indians of Mendocino County, California, *Contr. U. S. National Herb.*, vol. 7, no. 3, pp. 386, 387, 1902.

² Life and Culture of the Hupa, in *Univ. Calif. Pubs., Amer. Arch. and Eth.*, vol. 1, no. 1, p. 37, 1903.

³ Goddard, loc. cit.

⁴ Loc. cit., p. 141.

to the State of California, the only place where it has ever been known, and through any human agency, takes away the effectiveness of this "*prima facie* proof" and yields another strong probability that the tobacco of Hispaniola may have been carried from Hispaniola to Guinea rather than that any species of tobacco may have been brought from Guinea to Hispaniola or any other portion of the American Continent.

The third variety of *Nicotiana Bigelovii*, the var. *Wallacei* Gray, is found in a limited area in southern California and distinctly separated, in its distribution, from either, or both, of the other varieties of the species. Var. *Wallacei* is a plant of medium height, erect, and much more slender than either of the two varieties of central and of northern California. It has a smaller flower with more slender tube and I have never seen a three-celled ovary among several thousand examined, all the ovaries, and ripe capsules, having been found to be two-celled. While it is very probable that this variety may have been used by the Indian tribes of the region where it occurs, I have been unable to obtain any direct evidence that such was the case. Its relations with *Nicotiana Clevelandii* Gray, both botanically and as to aboriginal use, are still very uncertain.

When Lewis and Clark visited the Mandan villages in North Dakota in 1804,¹ they found the inhabitants smoking a kind of tobacco never seen previously by white men. They obtained specimens and seed for their collections as well as data for their report. The specimens brought back by them served as the type of the *Nicotiana quadrivalvis* Pursh² and are now preserved among the collections of the Academy of Natural Sciences of Philadelphia. The seed, or some of it at least, was distributed so that it was the source of the plants grown in various botanical gardens in Europe and its descendants are still to be found in some such institutions. A few years ago, through the courtesy of the Anthropological Section of the American Museum of Natural History of New York City, I was enabled to obtain from George F. Will of Bismarck, North Dakota, and from Melvin Ran-

¹ Cf. Thwaites, *Original Journals of the Lewis and Clark Expedition, 1804-1806*, vol. 1, pp. 183, 186, 187, 1904; vol. 6, pp. 142, 149-151, 158, 1905, New York.

² *Flora Americae Septentrionalis*, vol. 1, p. 141, 1814.

dolph Gilmore of Lincoln, Nebraska, seed of this species which was still being cultivated by a Hidatsa Indian. I have grown the descendants of the plants from this seed and in the pure line for several generations and find that it still comes absolutely true to type as described by Lewis and Clark and as represented by the Lewis and Clark specimens. The plants very closely resemble those of the type of *Nicotiana Bigelovii*, but the flowers are neither quite so large nor so graceful. The chief difference from any of the varieties of *N. Bigelovii*, however, is to be found in the ovary. This is constantly four-celled in *N. quadrivalvis*, while in *N. Bigelovii*, it is preponderantly two-celled, although three celled examples are frequent in the type and in the northern variety. *Nicotiana quadrivalvis* is not only the tobacco of the Mandan, but of the Arikara and the Hidatsa Indians as well. How they obtained it is not known, but it is not known outside of cultivation. This latter fact, taken in connection with the close resemblance to *Nicotiana Bigelovii*, the only essential difference being the increase in the number of carpels as shown by the four-celled ovary, makes it appear reasonably certain that *N. quadrivalvis* is only a derivative from some form of *N. Bigelovii*. It may possibly have arisen by a single mutation or it may be a hybrid derivative from a cross between *N. Bigelovii* and *N. multivalvis*. I have obtained forms very close to *N. quadrivalvis* as descendants of such a cross and such forms have appeared in the botanical garden of the University of California as the result of a probably spontaneous cross between the two species mentioned. It is of decided interest to find a *Bigelovii*-derivative so far from the *Bigelovii* home and this interest is increased by the fact that *N. quadrivalvis* is connected in distribution with the Californian area by the area in which *N. multivalvis*, itself seemingly a *Bigelovii*-derivative, is found under aboriginal cultivation.

The Hidatsa tobacco, which is fairly certainly *Nicotiana quadrivalvis*, has been the subject of study by Gilbert L. Wilson.¹ He says that the Hidatsa cultivate tobacco, but does not mention the species. It is not used by the young men because it prevents running by

¹ Agriculture of the Hidatsa Indians, an Indian Interpretation, *Univ. of Minnesota Studies in the Social Sciences*, no. 9, Minneapolis, 1917, pp. 121-127.

causing shortness of breath. It is not planted near corn because tobacco has a strong smell that affects corn. In harvesting, the blossoms are picked first, the white parts (corollas) being thrown away, and the stems and leaves are picked last. Both blossoms and stems are treated with buffalo-fat before being stored. The Hidatsa name for their tobacco, according to Lowie,¹ is *ôpe*.

Melvin Randolph Gilmore,² in treating of the uses of plants by the Missouri River Indians, writes as if they all used *Nicotiana quadrivalvis*,³ although he mentions specifically that his definite knowledge was of the Hidatsa tobacco only. He states that *N. quadrivalvis* was cultivated by all the tribes of Nebraska,⁴ but was lost as soon as they came into contact with Europeans and so completely that not even the oldest Omaha had ever seen it in cultivation. It seems fully as probable that the Nebraska tribes, being nomads, may not have cultivated tobacco, but probably obtained it by trade. In this case it seems just as likely that they may have obtained *Nicotiana rustica* from Indians of the Eastern Woodland Area or *N. attenuata* from those of the Plains Area, as to have received *N. quadrivalvis* from any one of the three tribes of village Indians of North Dakota.

Nicotiana multivalvis Lindl., the fifth and last member of the *Bigelovii*-group to be considered, bears a striking resemblance to the type of *N. Bigelovii* and also to *N. quadrivalvis* in habit, leaves, and shape—as well as color—of the flowers. The corolla, however, is usually more than five-lobed, varying to as many as twelve or more lobes. The ovary is the characteristic feature of the species. It is composed of two circles of cells, one within the other as in the case of the ovary of the navel-orange. The capsule of *N. multivalvis* bears fertile seeds in all, or at least in most, of its cells. Such a form of ovary as this is evidently monstrous, at least from the point of view of the normal ovary of *Nicotiana*, and may be supposed to have been derived from a form such as the type of *N. Bigelovii* by a rela-

¹ The Tobacco Society of the Crow Indians, *Anthrop. Papers, Amer. Mus. Nat. Hist.*, vol. 21, pt. 2, 1919.

² Uses of Plants by the Missouri River Region, 33rd Ann. Rep. Bur. Amer. Ethnology (for 1911-12), pp. 43-154, 1919.

³ Loc. cit., p. 59.

⁴ Loc. cit., p. 113.

tively simple mutation. An additional argument as to the possible derivation of this species from some simpler form is the fact that it has not been found outside of cultivation.

Nicotiana multivalvis was discovered by David Douglas¹ in August, 1825. The first specimen he saw of it was in the hands of an Indian at the great falls of the Columbia River, but, although he offered two ounces of manufactured tobacco, an enormous remuneration, the Indian would not part with it. The Indians planted it away from the villages so that it could not be pulled before maturity. They burned a dead tree or stump in the open wood and strewed the ashes over the ground to be planted. Later on, Douglas found one of the little plantations and helped himself to specimens. Soon after, however, he met the owner who appeared much displeased on seeing the plants under Douglas's arm. A present of an ounce of European tobacco appeased him and the present of an additional ounce induced him to talk of the Indian tobacco and to answer questions concerning it. Douglas learned from the Indian that he put wood ashes over the ground because it was supposed that the ashes make the tobacco plants to grow very large. He also learned that this species of tobacco grew plentifully in the country of the Snake Indians, who may have brought it from the headwaters of the Missouri River which they annually visited, and have distributed it from this region and in both directions east and west of the Rocky Mountains. This suggestion of the Indian probably represents a portion of the truth as regards the travels of this species, but the general trend must have been rather from the coast to the eastward and into the interior, if the botanical probabilities are duly considered.

Through the kindness of Dr. Robert H. Lowie, of the American Museum of Natural History, I have been able to make certain that the tobacco which is of so much ceremonial importance among the Crow Indians is *Nicotiana multivalvis*. I have examined photographs of the tobacco gardens of the Crows, in which the plants showed their characters remarkably well, and also a pressed specimen of an entire plant concerning whose identity there can be no doubt.

¹ *Journal Kept by David Douglas, etc.*, London, 1914, pp. 59, 141 (sub. *N. pulverulenta* Pursh).

Dr. Lowie¹ has since published his paper on the subject and brought forward much detail concerning the planting and ceremonial use of this species. In his preface, Dr. Lowie says that the Tobacco Society loomed large in the tribal life of the Crow, its ceremonial activities probably ranking next to the Sun Dance. The Crows insist that their tobacco is different from that of the Hidatsa (*Nicotiana quadrivalvis*) and botanically this idea is correct. In connection with the query as to whence the Crow, and the Hidatsa as well, may have obtained their particular types of tobacco, Dr. Lowie, in addition to the botanical evidence, calls attention to the fact that in the languages of several of the tribes using the *Bigelovii*-group of tobaccos, the root of the word for tobacco is *ōp* or *up* and that the Diegueños, the Shasta, the Takelma, the Crow, and the Hidatsa agree in this, while the tribes using other species of tobacco apply terms from different roots. This linguistic evidence is of decided interest and importance, especially when taken in connection with the close botanical relationship of the species and varieties concerned.

We have seen that the Indians of the Eastern Woodland Culture Area and of the Southeastern Culture Area made use of cultivated *Nicotiana rustica* which probably came to them through the southwestern corner of Texas from Mexico. We may now see that the Indians of the greater portions of the Plains Area, the Southwestern Area, and even of the North Pacific Coast Area used an entirely different species, viz., *Nicotiana attenuata* Torrey. The tremendous extent of that portion of North America over which this species furnished the tobacco of the aboriginal tribes is divided into a northern and a southern section, as a glance at the accompanying map will show, by the intrusion of two members of the *Bigelovii*-group, viz., *N. quadrivalvis* and *N. multivalvis*. *Nicotiana attenuata* is found growing wild over the Southwestern Area and over the southern and middle portions of the Plains Area, at least to the westward, but was cultivated over the northern portion of the Plains Area and in the North Pacific Coast Area where it does not occur spontaneously. The condition in the easternmost portion of the Plains Area is not as yet clear to me.

¹ Loc. cit.

The type specimen of *Nicotiana attenuata* came from the Washoe country in Nevada and I have reliable testimony that it is still used by the Washoe Indians, especially by the older men. To the south, it is used by the Coahuilla Indians of southeastern California,¹ and Leslie Spier has also kindly communicated to me that the Southern Diegueños about Campo, California, use this species, which they call "Coyote Tobacco," and infrequently cultivate it near house sites. It grows rapidly and high wherever the ground has been newly burned over. "Coyote Tobacco" is used by these Indians to cure colds. It is also used in the south by the Zuñi tribes,² whence I have received seed through Prof. A. L. Kroeber and have raised plants, and by the Tewa Indians.³ It was used by the Utes, although not named by Chamberlain,⁴ and by the Gosiutes.⁵ Dr. Lowie has submitted to me some samples of the tobacco raised by the northern Blackfoot⁶ which seems, although fragmentary and much broken, to show the characteristic hairs of this species. I have received from Mr. James Teit of Spences Bridge, B. C. (through the kind offices of Dr. C. F. Newcombe of Victoria), seed of the tobacco formerly cultivated by the Thompson River Indians of that vicinity and have demonstrated that the plants grown from it are true *Nicotiana attenuata*. C. F. Newcombe has informed me that he has strong evidence that this species was also cultivated by the Indians of the Queen Charlotte Islands and used for chewing. The evidence for the extent of the aboriginal use of *N. attenuata* seems to be convincing for the area as mapped and as outlined above.

Nicotiana attenuata has something of the appearance of a slender *N. Bigelovii*, but its flowers are smaller and less distinctly salverform.

¹ Barrows, The Ethnobotany of the Coahuilla Indians of Southern California, Univ. of Chicago, p. 74, 1900.

² Stevenson, Ethnobotany of the Zuñi Indians, 30th Ann. Rep., Bur. Amer. Ethnology, p. 86, 1915.

³ Robbins, Harrington, and Freire-Marreco, Botany of the Tewa Indians, Bull. 55, Bur. Amer. Ethnology, pp. 103-107, 1916.

⁴ Chamberlain, Some Plant Names of the Ute Indians, Amer. Anthrop., n. s., vol. 11, 1909.

⁵ Ibid., Ethnobotany of the Gosiute Indians, Mem. Amer. Anthropol. Assoc., vol. 2, pt. 5, p. 345, 1911.

⁶ Lowie, loc. cit., p. 112.

the lower leaves more distinctly petioled, while the glandular hairs often have a swollen, bladdery base which, in collapse, gives a blistery appearance. This appearance is of the greatest service in identifying fragments, particularly of the calyx parts. The plant itself is tall, erect, and often slender, although very robust plants are found in favorable localities.

One of the least satisfactorily known species of *Nicotiana* in North America is *N. Clevelandii* Gray. I know of this species only through the dried specimens in the different herbaria in this country. The specimens referred to this species even by Gray himself vary so considerably that I feel much doubt as to the exact nature of the specific characters. I have attempted to obtain plants and seeds from students who might be in a position to collect them, but without success. *N. Clevelandii* seems to have some characters similar to those considered peculiar to *N. attenuata* and other characters similar to those of *N. Bigelovii* var. *Wallacci*. Some specimens referred to *N. Clevelandii* have more the general appearance of one of the two species just mentioned, while others are very much more like the other of the two. One suggestion which seems probable is that these puzzling plants are hybrid derivatives of the two species which they resemble. So far as may be determined, *N. Clevelandii* is confined to the coastward side of southern California, extending from Santa Barbara to San Diego. The relation to aboriginal use or culture of this species is as unsettled as its botanical status. Rothrock¹ states that he found *N. Clevelandii* only in association with shell heaps in the neighborhood of Santa Barbara, California, and, on account of the tobacco pipes found in the same heaps, suggests that this may be the species used by the tribes of Indians who made the pipes. Possibly, also, this may be the tobacco mentioned by Sparkman² as having been formerly used by the Luiseño Indians of southern California and called in their language "*pa'icent*."

There is a very interesting species, of striking appearance, *Nicotiana trigonophylla*, in the southwestern United States, ranging from

¹ Botany, in *Report U. S. Geog. Surveys West of the 100th Meridian* in charge of First Lieut. George M. Wheeler, vol. vi, p. 48, 1878.

² The Culture of the Luiseño Indians, *Univ. Calif. Pub., Amer. Archaeol. and Ethnol.*, vol. 8, p. 229, 1908.

southeastern California to the western borders of Texas. Its aspect is very different from that of any other species of the genus in North America. It occurs in the lower portion of the territory occupied by *Nicotiana attenuata* where the latter species is the one usually employed for smoking. There is, however, a specimen in the U. S. National Herbarium (No. 13478), collected in Arizona by Edward Palmer in 1885, which has the note "used by the Yuma Indians." I am very much indebted to Leslie Spier of the University of Washington for the information that this species (identified by Paul Standley of the U. S. National Herbarium) is used by the Havasupai Indians of Cataract Canyon in Arizona, a branch of the Yuman stock. The Havasupai distinguish two sorts of this tobacco which look alike, but which they say smoke differently. The Havasupai cut down a mesquite tree, burn it on the unbroken soil, and scatter the tobacco seed over the dead ashes.

The remaining four species of *Nicotiana* found native in North America, or in the islands immediately adjacent to it, viz., *N. repanda* Willd., *N. nudicaulis* Watson, *N. plumbaginifolia* Viv., and *N. Stocktoni* Brandegee, are not, so far as I have been able to ascertain, suspected of being associated with aboriginal use, although some of them seem as well adapted to smoking, at least, as some of those which are widely used.

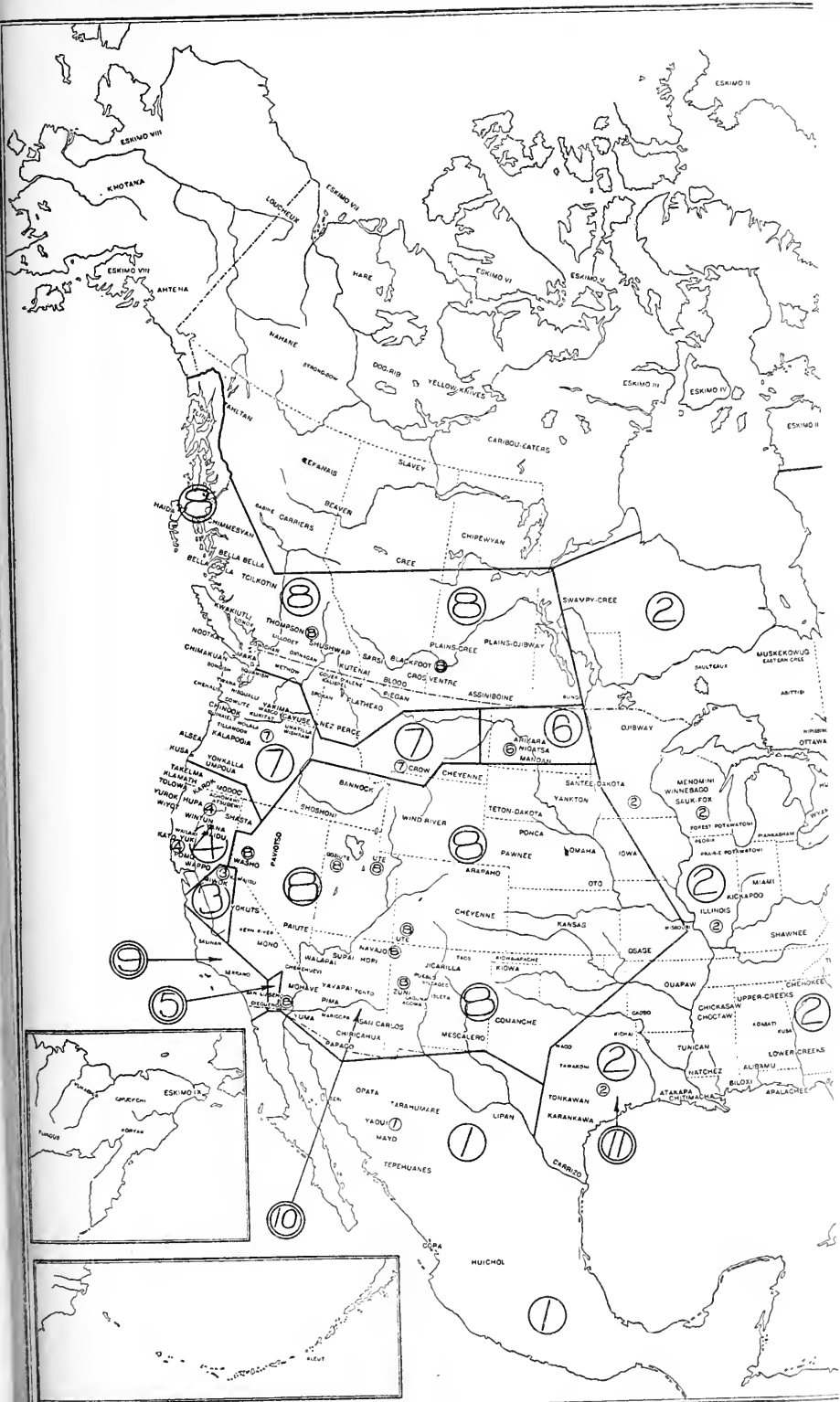
UNIVERSITY OF CALIFORNIA,
BERKELEY, CALIF.

EXPLANATION OF THE PLATE

The map used to indicate the areas of use of the different species of *Nicotiana* in North America, is obtained from the Department of Anthropology of the American Museum of Natural History of New York City and is the same as that given by Dr. Clark Wissler in *The American Indian* (New York, 1917, fig. 103). The lines delimiting the different *Nicotiana* areas follow more or less closely those used to mark off the various "Culture Areas" from one another (cf. Wissler, loc. cit., fig. 67), but with some differences. Within the different *Nicotiana* areas, the larger number within a single circle indicates the general species used, presumably throughout the area, while the smaller number within a circle indicates a tribe definitely known to have used it. The numbers in double circles placed without the borders of the land, but with arrows drawn to indicate the regions to which they belong, indicate, with the exception of No. 10, species not as yet known to have been in aboriginal use. The following is a list of the species, each with its appropriate number:

1. *Nicotiana Tabacum* L.
2. " *rustica* L.
3. " *Bigelovii* (Torrey) Watson (typical form).
4. " " (tall form).
5. " " (var. *Wallacii* Gray).
6. " *quadrivalvis* Pursh.
7. " *multivalvis* Lindley.
8. " *attenuata* Torrey.
9. " *Clevelandii* Gray.
10. " *trigonophylla* Dunal.
11. " *repanda* Willdenow.

I am indebted to Mr. Charles E. Davis of Edgewood, R. I., for the preparation of this plate.



DISTRIBUTION OF NORTH AMERICAN ABORIGINAL TOBACCO

THE SUPERNATURAL IN TONGA

By E. E. V. COLLOCOTT

IT is no longer possible to observe at first-hand the ritual of Tongan worship. Even the names of the gods are well nigh forgotten. All that will be attempted here is to bring together a few of the conceptions of the old Tongan when he came to have dealings with the invisible world, adding little, probably nothing, to the general sum of information respecting Polynesian beliefs, but merely supplying a few points for comparison from a region which has not been so fully described as some others.

TABU

GENERAL REMARKS

The main island in the Tongan Group is marked on the maps as Tongatabu, though locally it is most often called simply Tonga. Very frequently, however, it is called Tongatabu, sometimes Tonga Lahi (Great Tonga), or Tonga Eiki (Chiefly Tonga). It probably owes its appellation of "tabu" to the fact that it is the residence of the great chiefs, those who in the beginning descended from heaven, the offspring of a mortal woman and a god. These chiefs are the fount and source of chiefly influence and prestige, the head of the sacred polity of the group in its practical working. Natives say that the people of the northern groups of Haapai and Vavau would remark on the incessant tabus imposed on them when they visited Tonga on account of the proximity of the high chiefs. That can have happened, however, only in the immediate entourage of these great lords.

The idea of tabu itself is twofold, or has a twofold aspect, indicating firstly sacredness, that which is *nefas*, frequently equivalent to the holiness by which our English Bibles render the Hebrew *qadosh*, the mysterious perilousness and unapproachableness which surrounds mystic power. Besides this uncanny essence of the occult tabu em-

braces concretely the body of prescriptions which regulate the conduct of man in his relations to tabu persons and things.

Besides the simple word *tabu* there are several compounds in common use, the reduplicated form *tobutabu* which indicates a high degree of sacredness, as does also the word *tabuha*. There is the verb *tabui* which means "to place under a tabu," and the noun *tabuaki*, with corresponding adjective *tabuckina* and verb *tabuakii*, which are used now with the sense of bless, though if that be the precise ancient signification I am unable to say. These words are used frequently in Christian worship though I do not remember to have seen the three last in an old document. Possibly their meaning is "to invest with sacredness."

The range of ideas included under tabu is very wide, varying from the religious sanctity of gods and chiefs to the working of sympathetic magic. In its practical application to daily life it is a system of prohibitions, widening to meet the demands of religious, social, and industrial activities. Some tabus, therefore, should be studied rather for the light they throw, for example, on social organisation than as elements in definite religious practice, but whether the tabu be to ensure a satisfactory yam harvest, or to preserve the purity of social relations, or to regulate the approach of man to his gods, the sanction is in all cases supernatural, safeguarded by laws beyond mortal ken, though man may frequently rid himself, and in some cases even forestall, the uncanny vengeance of the violated tabu. Although civilised and scientific man may classify the phenomena into various groups, to primitive man they are all part and parcel of the same thing, the relation of man with the great and often terrifying body of the unknown, all included under the same word and regarded with the same awe. There is no doubt that in some directions native ideas must have been rather vague as to what would be the consequences of neglected tabus, as experimental evidence was obviously not easily come by.

From before his birth till his death, or after it, primitive man is surrounded by prohibitions of mystic sanction. It must not be imagined, however, that at the stage of development at which Tongans had arrived freedom was so curtailed, or the mind so filled with shadowy

dread, as to make life wretched. There were many tabus, but some of them resulted from the mistaken premisses of primitive science, and however ineffective their observance may have been they imposed no more toil on the laborer than a due regard to scientific agriculture entails on the white farmer. Rather less toilsome perhaps were they, but less useful. Again, in the matter of social relations the Tongan enjoyed in some respects a greater liberty than did his Christian contemporary, whilst the duties imposed by religion proper were neither oft recurring nor excessively burdensome. The fear of hell which many a primitive man has exchanged for his heathenism would seem a motive for more harrowing dread than any supplied by his discarded beliefs. A mild climate, abundant rainfall, and fertile soil, in the fruits of which all might share, went far to assure physical contentment, and, though the modern tendency is certainly not to underrate the importance of economic factors in national and cultural development, their potency in promoting material well-being is not likely to be overstated.

In passing it may be remarked that Christianization frequently means for primitive man the carrying over to a new set of objects much of the old manner of thought. Thus Sunday, called in Tongan by the Jewish name Sabbath, "*Sabate*," is the tabu day. The prohibitions against labor in the Fourth Commandment are naturally and properly rendered in the Tongan version of the Bible (which by the way is called the Tabu Book) as labor being tabu on the seventh day, and this idea of the tabu day is more easily assimilated and more strictly enforced than many of the more positive precepts of Christian teaching. A Tongan will not so much as pluck a flower or break a branch from a shrub on that day. Again, church buildings are tabu. The practice, not infrequent in white countries, especially in rural districts, of holding social gatherings in church buildings at which food and drink are served would be entirely repugnant to Tongan thought. From regard to sacredness, also, water from church roofs is not stored or used. It is said that a few years ago a child died in one of the Haapai Islands through drinking water which had dripped from a church roof into an empty tin placed under the eaves.

BIRTH AND PUBERTY

Before his birth the Tongan is protected by tabus which show the working of sympathetic magic. The expectant mother must not put any sort of girdle or necklace about her neck lest in labor the umbilical cord become entangled around the child's neck. The coconut for her to drink must be properly opened. There are two ways of opening a nut, one by piercing the little round eye at the stalk end, and the other by striking off the bottom of the nut, thus making a hole usually about two inches across. The pregnant woman must drink only nuts pierced at the top. Should she drink one opened by the other method her child's mouth will gape like the gaping coconut. She must not cut anything with a knife. Should she neglect this precaution her child will be marked by some sympathetic deformity, e.g., the hand may be deformed as though the fingers had been shorn off. She must not sit in the doorway of a house, lest, as she is partly within and partly without the house, her child's face reflect this local ambiguity by being differently formed on the two sides. The pregnant woman must allow no temptation to induce her to steal, as the child is sure to bear the mark of theft. Should the mother, for instance, steal a fowl and prepare it for the oven the child's legs may be trussed up like the fowl's, and so on of other thefts and their appropriate stigmata. In 1920 a woman bore a child whose hands were deformed as though the fingers had been cut off. She was questioned, and confessed that during her pregnancy she had stolen and cut up a fowl. These prohibitions for a pregnant woman apply with especial force against unauthorized meddling with her husband's possessions, though if she obtain his permission to use anything belonging to him she may do so without fear.

After confinement both mother and child are smeared with turmeric, and the mother must not leave the house or bathe for five nights, or, as we should say, five days. Bathing was also prohibited for a fixed period, in this case three nights, after a boy had undergone the operation of supercision, which is performed at the approach of puberty. After three nights the boy goes to the sea and bathes, this bathing having been called in my hearing, though doubtfully, the tabu bath. At about the same time the long lock of hair left on a

boy's head seems to have been cut. This practice of leaving a long lock is now obsolescent. One still sees it, but not frequently. It is said that the hair of the girls used to be cut short on the crown and left long at the sides, but that at puberty the hair was cut the same length all over and then allowed to grow. This treatment of the girl's hair has become even more rare than the boy's long lock and I am unable to say that I have seen any undoubted example.

Amongst the gifts at a wedding are mats, presented by the bride's relatives, on which the young couple shall lay their children when born. The happy pair rarely, if ever, use this thoughtful gift for its ostensible purpose, and indeed do not keep it for themselves at all, but let it go in the general distribution of presents at the wedding ceremony. For some days prior to the marriage of high chiefs, the length of time varying according to the period before the guests begin to arrive, native cloth for towels, and candle-nuts (with which the Tongans prepare a favorite detergent) are presented to both bride and bridegroom. The interesting statement has been made that the cloth and mats used by the bride in bathing were afterwards given to the bridegroom, but this has been categorically denied by the chief whose marriage called forth the statement, and as few have taken a deeper interest in ancient Tongan ceremonial, or are better versed in it, his ignorance of any such practice cannot be lightly set aside. In his opinion the cloth and candle-nuts were presented to the bride and bridegroom for them to cleanse and beautify themselves for each other. He added that there is always the possibility that they will not be so used, and that in any case they are distributed to the guests with the other presents. It should be added that the portion of the wedding gifts which ultimately falls to the lot of the bride and bridegroom may be very small.

It is time, however, to return to our new-born infant, whose cord has not yet been cut. The cutting of the cord was performed by the male head of the household. The midwife placed the cord conveniently, and as paterfamilias struck it asunder with an axe he uttered a wish for the future career of the child—that a boy might grow up a great warrior or fisherman, that a girl might be beautiful, and so forth. The paternal benediction not infrequently called for

success in love in the case both of boys and girls. The severed cord, as Mr. McKern has informed me, is carefully buried in some recognizable place, e.g., in a mound if there be one conveniently close, or the spot may be marked by planting a tree or shrub.

SOCIAL TABUS

Social life is guarded by tabus which in their most general form forbid an inferior to touch his superior. Dr. Martin remarks (in Mariner's *Tonga*), "Every chief also pays the greatest respect towards his eldest sister, which respect he shows in an odd way, viz., by never entering the house where she resides; but upon what exact principle, except custom, Mr. Mariner has not satisfactorily learned." This tabu noted by Mariner between brother and sister is not confined to the eldest sister, but is general. "Brother" and "sister" are of course misleading terms if understood with their English connotation. Distant cousins are included, and "collateral relatives" would better translate the Tongan words. But using "brother" and "sister" with the breadth of the corresponding Tongan terms we find that brothers and sisters are tabu to each other. A brother, if he enter a room where his sister is sitting, must keep at a distance from her, and so of the sister coming upon her brother. If a man is sitting talking to other women his sister must not approach the party at all. This tabu upon the intercourse of brothers and sisters is not entirely incompatible with cousin marriage, which may take place with the approval of the relatives on either side whose prerogative it is to secure a match for the couple concerned. When the match has been arranged the hitherto tabued "brother" and "sister" may be brought together and mated. Quite recently a youth and maid, distantly related, set their affections on each other, but when their love, which was very innocent, became known the relatives failed to smile. The girl's real brother in particular professed himself filled with shame, and the unhappy swain carried his embarrassment and stricken heart to another island. Tongan resentment, however, is short, life has resumed its normal course, and the youth has returned, though he appears to have left his unlucky passion in the place of his temporary exile.

The form of cousin marriage most favored is that of a man to his mother's brother's daughter, though other forms are possible. None of these relationship terms must be understood as connoting necessarily the same closeness of connection as in English. Cousin marriages are more common amongst chiefs than amongst the rank and file, and it is said indeed that when such marriages occur amongst the people it is in imitation of the chiefs.

Considering the social status of women the foregoing tabu between brother and sister may be part of the general system wherein the superior is tabu to the inferior, though old legends make it more probable that, at least in comparatively ancient times, the safeguard was against incest as such, though this is not in itself necessarily the explanation of the origin of the very stringent Tongan sentiment against marriage of close relatives. With reference to the expression "close relatives" a Tongan once remarked to me, "We count as closely kin those whose common ancestry is even four generations back."

A tabu still regarded is that of not eating or drinking the remains of food or drink of a superior. The penalty for the violation of this rule is a sore throat, which can, however, be cured by being stroked by the superior whose victuals have caused the trouble, or by one of still higher rank. A person suffering from a sore throat, which he suspects to have been caused in this way, will take a short cut to cure by resorting at once to the highest chief available. In earlier days the cure used to be effected by an application of the chief's foot to the sore spot, but the hand has been found equally efficacious and is now usually employed. Should anyone desire to help himself from the platter of a superior the unseen powers may be cheated by a little simple collusion. After the inferior has helped himself to the tabued viands an immediate application of the superior's hand will ward off all unpleasant consequences. It is in the item of drinking a coconut after another that this tabu seems to be most regarded, possibly because sharing a coconut is fairly common, but more probably because the coconut, being completely closed round but for one small opening, is a peculiarly fit receptacle to retain the influence emanating from the drinker. A similar idea to this is found in Fiji and will be noted later.

The tabus relating to contact with the body of a superior are naturally most marked in reference to high chiefs, but the respect paid to chiefs seems to be part and parcel of the general social system, throughout which the gradations of rank are well known.

The head and back are the most sacred portions of a chief's body. No one will touch the head of a superior nor pass close behind his back without apology. In the case of a great chief he would not pass there at all. In certain great ceremonial kava drinkings there is a high chief who sits, not in the ring where the majority of the chiefs have their place, called the *alofi*, but in the portion of the ground where the kava is prepared, called the *toua*. But although this chief is called the chief of the *toua*, he sits by himself at some distance to the rear and side of the group who are brewing the drink, so that all work in connection with the ceremony is performed without anyone's passing behind him. So in the *alofi* the attendants as they come and go always pass within the circle, before the chiefs, and never outside, behind them.

Eating and drinking in the presence of a high chief of greatly superior rank to oneself is tabu. A great chief himself may experience this inconvenience in the presence, e.g., of the king. This has been noted by old voyagers, and an example came under my notice within recent years. A white lady invited the late king of Tonga and a couple of high chiefs to dinner. One of them was able to eat freely in the presence of His Majesty, but the other, a robust young man who might have been expected to own a healthy appetite, toyed with his food in embarrassment. Afterwards he laughingly remonstrated with his hostess for her unkindness in setting such an excellent dinner before him in the presence of the king, where he was unable to do justice to it. This tabu against eating in the presence of a high chief may be overcome by retiring to a short distance and turning the back to the great lord.

Leaving the matter of eating and drinking to return to respect to the person of superiors, we find that if a chief be sitting with some utensil close behind him which the people about wish to use, their only hope is that the chief will himself notice their predicament and tell someone to come and take what is required. Otherwise they

must make shift to obtain elsewhere a utensil fitted for their purpose.

A strict regard to the tabu surrounding the persons of superiors would introduce almost intolerable inconveniences into the relations of intimate domestic life, but although there is considerable relaxation the tabu of the head and face is observed fairly strictly. A father's head is tabu to his child. There may be Tongan fathers who would pick up their children and let them pull their moustaches or hair as many a white father does, but they can not be numerous. The Tongan father does not nurse and caress his child as freely as the European father does. There are doubtless other considerations operative, of which, by the way, lack of natural affection is not one, but probably the most potent reason is the tabu of the father's person.

DEATH

In the treatment of the dead the working of these ideas is clearly seen. The body is prepared for burial by those of family rank superior to that of the deceased, who had been able to approach him freely during his lifetime. Relatives and friends of inferior rank will pay a farewell visit to the deceased shortly after death, but the visit is short, and during it they sit at a respectful distance in that part of the room towards which the feet of the body are pointing. The visitors may indeed kiss the face of their dead friend (probably an innovation since the introduction of Christianity), but after bestowing the kiss they at once retire to a proper distance. There are those who kiss, not the face, but the feet of the deceased. Ordinarily the body is prepared for burial by those whose relations to the deceased enable them to approach him freely, and they suffer no inconvenience from the contact. In the case of high chiefs, however, the last offices are of necessity performed by those of inferior social status, and their hands are thereafter tabu for a certain period, during which the tabued person may not feed himself. It has not often been the fortune of Europeans in these latter days to see a person with tabued hands, but the Rev. C. P. Walkden Brown, late Chairman of the Methodist Mission, who left the group in 1908, was on one occasion present at a Tongan feast in company with a man under this interdict.

The rites in connection with the burial of great chiefs have fortu-

nately been described by early travellers with a considerable amount of detail concerning ceremonies unfamiliar to the present generation of Tongans. The European custom of wearing black clothing and black arm bands as a sign of mourning is now universal and carried through much more completely than is usual amongst Europeans, especially in these hot tropical latitudes. In addition the old Tongan practice of wearing a ragged mat is still adhered to. A mat, other than the cloth loincloth, is a mark of respect to superior rank. In the item of the mat as a sign of mourning close relatives of the deceased will wear a ragged mat, but those not nearly akin to the deceased will wear a good one. As a mark of respect to a chief if a mat be not obtainable any sort of belt seems to answer the purpose. A few years ago I was working with some boys a few hundred yards from the beach. The king was on a visit to our island and happened to be standing at the time near the beach. None of the boys would even remotely approach the place where His Majesty was without first girding himself with a piece of mat or some substitute. Some of the boys wound a length of a creeping vine about themselves. Old travellers have noted that, in the presence of a chief, people who happened to be clad about the shoulders turned their clothing back to the waist. It was tabu to have the native cloth (*ngatu*) about the body, but the mat (*fala*) around the waist, even if it extended higher up the body than was permissible for the cloth, was not only allowed but enjoined as a mark of respect. The leaves of the *ifi* (Tahitian chestnut) around the neck were a sign of the utmost respect, and regularly worn by those who had a great boon to ask.

Anciently the disposal of the body of a man of insufficient social elevation to be possessed of a soul seems to have differed considerably from the elaborate ceremonial which marked the interment of a high chief. This is only to be expected, as the chief's body has been the temple of a spirit which lives on in Bulotu, although apparently capable of revisiting his earthly shrine, or in some other way exerting influence in its vicinity. The commoner's body was not the seat of a soul and its neighborhood was less likely to be made uncomfortable by ghostly disturbances. This apparently straightforward division into chiefs and commoners is not so simple as it looks. It would

probably puzzle most natives to draw the exact line at which the class of the soul-bearers ends and that of the soulless begins. Chiefs were buried in cemeteries (to which amongst other names that of *malae* is applied), whilst the lower orders were interred in some convenient place close to the dwelling. A man living alone would perhaps be buried inside his house and the house then deserted or even burned down. The members of a more numerous household would be buried round about the house, and when say half a dozen had been thus disposed of the survivors would seek a fresh site for their habitation. Christianity has endowed the common folk with souls, and promoted their mortal remains to the dignity of as careful interment in cemeteries as that enjoyed by their "betters." In speaking of a very high dead chief it is not uncommon to refer to him as "the chief in such a burial ground, or *malae*." The highest chiefs are often said to be "away," or "at a distance," when their death is spoken of.

After the death of the late King George II, in 1918, the body lay in state for several days (not an ancient custom), and every night during the lying in state multitudes of lanterns were burnt about the palace, and little fires completely surrounded the compound. These were tended in silence during the night, and might not be extinguished until the first had been put out by one of the very few persons—one at least of whom was a woman—of sufficiently high rank to give this signal. In this, as in other matters, foreigners are exempted from the tabus which bind the natives. One morning when a native able to extinguish the first flame was not at hand the services of an Indian cook were requisitioned, or were just about to be when a native appeared who was entitled to perform this ceremony. In the case of the kings the tasks connected with their burial are largely in the hands of the craftsman class or hereditary guild (*haa tufunga*). The tombs of the old Tongan kings stand in inviolate sanctity in places almost untrodden by human foot, and the gloom of forest and thicket enshrouds these abodes of supernatural dread. In modern times the Christian care of the resting places of the dead has overcome the old avoidance of burial-places. The present kings of Tonga, moreover, are buried in the town of Nukualofa, the capital, and the necessity of keeping such a site clear is modifying the old tabus.

THE TUI TONGA

The Tui Tonga when travelling was frequently borne on a litter, though land on which he stood, or houses into which he entered, did not become tabu and therefore unavailable to their former possessors or users. Mats and cloth which he used seem not to have returned to their former owners, but to have become the property of the Tui Tonga. Such articles he seems frequently to have passed over to his retinue. The tabus surrounding the Tui Tonga's person were of course strict. The London Missionary Society's missionaries who arrived in the *Duff* in 1797 relate that the Tui Tonga going into their house in western Tongatabu requested that they shave him. This ceremony of the toilette was performed, but until everything was safely finished the natives about were in the greatest trepidation lest some of the sacred hair should fall to the ground. The operation of supercision could not be performed in Tonga on the Tui Tonga. He had either to go without the operation or visit Samoa or Fiji for the purpose.

CEREMONIOUS SPEECH

An interesting example of the tabu surrounding the great chiefs is seen in the opening of ceremonial speeches in their presence. The speaker clears away, group by group, the tabus that would prevent his speaking. He says "Tabu for such a one," using an expression which it is exceedingly difficult to render into English, but whose real significance seems to be, "With all due regard to the tabu of So-and-so." This introductory apology having been completed the speaker will say, "It is now permissible for me to go on with my speech." There are two important sets of these tabu formulae, one for the Tui Tonga chiefs and the other for the Tui Kanokubolu, but naturally enough the practice of thus prefacing a speech is widely extended. In sermons, ordinary addresses, and in conversation, anything which the speaker feels should be introduced "saving the presence of" his auditors will be introduced with this apologetic preface. Especially is this the case when mentioning bodily infirmities to a person of superior rank. A commoner would scarcely mention at all a physical defect of a chief to whom he was speaking, at any rate without the license of intimately friendly conversation, but in men-

tioning the ailments of himself or of some other person, at last coming to a point where description languishes for lack of an outright term, the dreadfully blunt truth must be told, "Tabu to you," and the exact condition of a leg or an eye is detailed. Matters which are treated with great reticence by Europeans are discussed by mixed companies of Tongans with perfect freedom and complete absence of embarrassment.

INSTALLATION OF TUI KANOKUBOLU

No important ceremony is conducted without kava drinking, and in the preparation and serving of the kava is seen the flower of Tongan ceremonialism. Usages vary in the two great houses of the Tui Tonga and the Tui Kanokubolu. The modern consolidation of the kingdom has confirmed the power of the Tui Kanokubolu, and the office of Tui Tonga, although the higher in rank, has been abolished. In 1918 the present queen ascended the throne of her island kingdom with the title of Tui Kanokubolu, the title which was borne by her predecessors in the sovereignty of this now constitutional (on European lines) state. Besides a European crowning there was also an installation by the old kava ceremony. This was anciently performed at Kanokubolu, whence the title of Tui Kanokubolu (King of Kanokubolu) is derived. Kubolu is the same word as the Samoan Upolu, and legend asserts that this line is descended from a Samoan woman and a Tongan chief. Kano is a root found in words meaning "flesh," "body." The late Dr. Moulton renders Kanokubolu as "Heart of Upolu." In Kanokubolu the king used to be installed with his back towards a certain tree, and the ancient requirements have been met in modern practice by letting a piece of wood from the traditionary tree into the back of the throne. The water for brewing the kava was on this occasion brought by a great number of runners from a supply a short distance away. So freely and with such obvious intention was water spilt as to suggest a charm, but good Tongan authority asserts that the water was spilt so that each man might arrive at the bowl with but little, and that the whole proceeding might be marked by the maximum of bustle and activity on the part of as great a number as possible to show the numbers and

zeal of the queen's followers. The strainers (bunches of wild hibiscus fibre) were provided by special groups whose prerogative it was, and represented certain chiefly families.

During the ceremony three conventional speeches were delivered by three chiefs belonging to the Tui Kanokubolu group, who each before speaking slid forward without rising, with two little jerks, returning in the same manner to his place when his speech was finished. These speeches followed traditionary forms, and were exhortations to the Tui Kanokubolu and the people to do their duty to the Tui Tonga chiefs. The first referred to shell-fishing, the second to the bonito fishing, and the third to the fruits of the soil.

An interesting feature of these ceremonies was a man belonging to a family which is connected with Fiji, who was decked out like a Fijian warrior. He preceded the royal procession to the ground by about a hundred yards or so, crouching and running and looking about like an outpost spying out the enemy. When the queen was seated he violated all tabus and rules of ordinary decency by taking up his station near her, passing freely behind or before her, smoking whilst standing or lounging close beside her, and finally, when the pig's liver which is customarily offered to the chief on such occasions was put before the queen, he broke off a piece on the point of his spear and ate it in her presence.

The sanctity of the great chiefs is well illustrated in an interesting native manuscript which was made available to me by the kindness of the Hon. W. Tungi and Mr. E. W. Gifford. In these notes the special words applied to the highest chiefs, the Tamaha and the Tui Tonga, are called the *tobutabu* insignia, the most sacred insignia. Since the institution of monarchy on the European pattern the Tui Tonga words are applied to the reigning sovereign.

FISHING

Industries have their own tabus. I have been told that formerly a woman must not step over the green shoot of a sprouting yam, though this is not now regarded, and young women of the present generation whom I have questioned know nothing of it. It was also tabu for anyone to step over a fishing net whilst it was being made.

Presumably if men passed from one side to the other of the net the fish would do the same. The various sweet-smelling flowers which are used to adorn and scent the leaf-girdles which are always worn on festival occasions by both men and women, but particularly by the women, are protected by a tabu belonging to the range of sympathetic magic. Flowers that have been used in the leaf-girdle must not be burnt before they are quite dead and dried up. Should this tabu be violated the tree from which the burnt blossoms were taken will thereafter be useless for supplying flowers for the girdles, and any blooms plucked from it will quickly fade. It is only the individual tree which is affected, and flowers from other trees of the same species will retain their scent and freshness as before.

Fishing, an important industry of the inhabitants of these tiny islets, and one moreover subject to alternations of success and failure, of calm tranquillity and boisterous hazard, from causes which it is frequently difficult either to foresee or to explain, retains in large measure its old safeguard of tabus. If a man be out fishing and someone inquire of his wife where he is she must not tell. Better to sacrifice the truth than her husband's luck. This tabu, however, is now falling into disregard. The best known tabus are those concerning the bonito and the shark. The bonito whose origin, or at the least first arrival in Tongan waters, has a supernatural connection with the Tui Haangana, the chief of the island of Haano in Haapai, will not suffer himself to be caught off that island if the chief ventures outside his house whilst bonito are in the vicinity. A similar tabu keeps one of the chiefs of the eastern end of Tongatabu within doors when the bonito appears. There is also a proper order for the disposal of the first-fruits of the bonito fishing in Tongatabu before the fish is available for the people at large.

Of no fishing is the ritual more exact and more flourishing today than that attending the pursuit of the shark. The most perfect harmony, even of thought and sentiment, must prevail amongst the fishermen and amongst their friends and relatives ashore. Discord or the hidden rancor of the heart is fatal to success. A young woman relates that in her childhood, as a party of shark-fishers were setting out, she cried to be taken with her father who was a member of the

expedition. Every means was tried to pacify the child, but in vain. The situation was extremely awkward. On the one hand was the difficulty of taking the girl, and on the other the futility of hoping to take a shark if she were left weeping ashore. Finally, as the child refused to be comforted, she was perforce taken on board. The shark-fishing has been described in his book *Chez les Méridionaux du Pacifique*, by His Lordship Bishop Blanc of the Catholic Mission in Tonga, or P. Soane Malia as His Lordship was called at the time of publication.¹ Before the expedition sets out a house ashore is shut up and becomes tabu. "This house had just been carefully shut, shortly before the departure of the fishermen. It was that of the head man. Its being closed and the departure of its owner gave it a mysterious character; it became 'house of the fishing,' that is to say a place to which approach was forbidden to everybody until the return from the fishing." The shark is taken by a running noose on the end of a line, and is enticed alongside the boat by sounding with the coconut-shell rattle formed by threading coconut-shells on a stick, and by the fishermen calling out. The crew not only call to the shark to come, but add many blandishments, with flattery of its beauty and wily promises of high festival ashore. The subsidiary inducement of a piece of roast pork displayed outboard is not wholly discounted.

When the shark has once come alongside his fate is usually sealed. The noose is slipped dexterously over his head, and if necessary a man will even jump into the sea to make a better adjustment of the cord. Non-success in this sport is attributed to broken tabus. On the occasion which Bishop Blanc describes nine sharks were taken, and it may be best to quote a little of the conversation which he had with the head of the expedition after its return:

"And you have done this (i.e., called and taken a shark) nine times?"

"Yes."

"And the shark always comes? It always obeys?"

"When it does not come that is a bad sign. There is something in fact which prevents the shark from coming."

¹ It was published by Librairie Catholique Emmanuel Vitte, Lyons and Paris, 1910.

"And what then?"

"When it does not come there is nothing to do but return to shore, because that is the proof that someone has violated the tabu of the closed house, or perhaps that one of us has some grudge or anger in his heart. So we must go and correct what is amiss, and then the fishing may recommence."¹

The shark indeed is a great searcher of the heart, and the man who attempts to approach the cavern where resides the great shark-god of the island of Eua will find himself unable to reach the spot should his heart be not as it should be. Although particularly notable in the case of the shark the same type of idea is found in fishing generally. Persistent ill-luck gets a boat a bad reputation which reflects more on the ethical qualities of crew and owners, and of the boat herself, than on their skill as fishermen. "The fishing is accursed; let us go ashore."

Gardens were protected by tabus. Frequently a coconut-leaf representation of the shark was put up on the trunk of a tree, which was as effective as turning the shark-god *Taufa* loose in the garden. It is stated that *Taufaahau*, better known to Europeans as King George I—under whom, after many years of strife, Tonga became a homogeneous kingdom with Christianity universally and firmly established throughout the group—experimented with some of these tabu signs to assure himself of the impotency of the old gods, and also made the more daring test of swimming out to the opening in the reef of the island of *Lifuka* in *Haapai* and shouting defiance to the sharks.

SIN

A general idea of the sort of conduct that was ethically right is obtained by attention to the words which indicate wrong-doing. This is too lengthy an inquiry to be entered on in any detail in this place, but to inquiries as to what conduct would be formerly included under the word *hia*, which is commonly translated "sin" but is today too much mixed up with the modern machinery of law-courts to afford a clear idea of its ancient significance, it was answered murder and connection with the wife of a man of superior rank to the offender.

¹ Op. cit., pages 59 and 60.

Another native, commenting on sexual breaches, remarked that a man who violated the wife of a great chief would be slain by his own people. There would seem to be little doubt that if any such hardy lover escaped the vengeance of mortals his offence would not pass unnoticed of the unseen powers. In fact an instance of this sort was recently related to Mr. Gifford and myself. A man of considerable rank had gone from the island of Eua to Tongatabu and was living in close and friendly connection with the reigning Tui Tonga. The latter went on a voyage to Haapai shortly after one of his wives (not the chief wife) had given birth to a child, leaving the mother and babe to the care of the Euan whose relations with his fair charge soon became too fond and intimate. As a consequence of his wife's frailty the Tui Tonga found on his return that the child had fallen ill. The secret of the guilty pair had, however, not yet been divulged, and recourse was had to the lot, by spinning a coconut, to discover the person whose wrong-doing was responsible for the royal infant's alarming condition. The lot fell between the Tui Tonga himself and his unfaithful spouse. The next spin brought the guilt right home to the woman who confessed her sin. The story ends in a manner to satisfy the most susceptible reader of love romances. Not only did the Tui Tonga forgive the lady, but he bestowed both her and the infant on the successful lover, and all three removed to Eua where the child became the progenitor of a line of chiefs. It was apparently no uncommon thing for a village to choose a handsome girl to take to a high chief that she might bring back to them a chiefly child. Such a child was called by a word indicating that he was not so much the possession of an individual mother as of the whole village or family group.

The consequences attendant on illicit love affairs are often illustrated today. Not infrequently a man and woman who do not desire to marry, or are unable to because of some previous union, take an oath of mutual fidelity on the Bible. Various circumstances may make them desire to be rid of this bond. Perhaps if the woman is married one of her legitimate children falls ill. One of the parties themselves, or one or other of their relatives, may become sick, or die. Although no entanglements of this sort may be impeding the course

of true love, errant fancy may have been attracted by some other charmer. In all cases the procedure is the same. Recourse is had to a white missionary or native pastor to dissolve the oath. In the cases that have come to my own notice the clergy, European and Tongan, have refused to be parties to this superstitious use of the Bible, and have sent the suitors away with a little healthy advice.

In reference to murder Mariner remarks, "An old mataboole used to say, that useless and unprovoked murder was highly offensive to the gods, and that he never remembered a man guilty of it but who either lived unhappily, or came to an untimely end." The gods sometimes turned peevish for less weighty reasons than wanton homicide. Soon after the introduction of Christianity into Tongatabu, and before it had spread throughout the whole island, Boiboi, the chief of a still heathen district, became very ill, and was carried on a stretcher to the priest of his god. After a time the priest was seized by the convulsive movements which indicated his possession by the deity, and then informed the waiting assembly that the god had been away in a different part of the island at a single-stick match, but had now returned. He had been very angry with Boiboi because the latter used to make an insulting gesture with his eyes, but he was now reconciled to him, and the chief would recover. Boiboi honored the declaration by an immediate recovery, and rising from the stretcher he went off quite well.

MANA

GENERAL REMARKS

Another important conception, shared by the Tongans with their neighbors of the Pacific, is that of mana. Whilst tabu inculcates the duty of man towards the occult, mana indicates the mysterious forces in operation. The range covered by this idea is very wide, and there has sometimes been a tendency to dogmatize too positively on the inability of peoples at the Tongan level of culture to conceive abstractions. Mana is rendered in English as a wonder or miracle, and is employed in this sense in the vernacular version of the Bible. It is a common word for thunder. An adjective (*mana'ia*) containing this root is used of a man who is especially attractive to women. It

probably occurs in the word for breath (*manava*), which again is used of the womb, though apparently without strict anatomical precision. This same word is found in compounds meaning fear (*manava-jii* "little manava or breath," *manava-he* "wandering manava"), and courage (*manava-lahi* "great manava"). Taking this class of words together the primary significance of *mana* seems to be living power or force, and the word for breath and womb perhaps means the place or seat of this power or force.

OMENS

The occult forces of the universe frequently manifest themselves as warnings to mankind, and hence arises one of the commonest uses of the word *mana*, namely an omen. Many of these omens are still known and more or less believed in. A considerable number are concerned with impending calamity to a chief. Usually of course the portent would occur in a locality or in an object which had some relation to the threatened lord. In the island of Uiha in Haapai is a spring which turned red as a warning of the approaching death of the chiefs connected with that place. A rock in the western district of Tongatabu indicated in some way a similar catastrophe. The breaking off, in calm weather, of branches of the banyan tree is an omen of the death of a great chief. The large tree in eastern Tongatabu under which Captain Cook addressed the natives fell down a few years ago, and this proved to be an omen of the death of the late King George II, though His Majesty survived the tree by about two years. The roaring of the sea on the wide flats skirting a good length of the shore of western Tongatabu is also the sign of the death of a chief. At the time of the death of King George I there was an unusually protracted spell of rainy weather. This too was *mana*, though apparently not so much an omen of the king's approaching end as a sympathetic disturbance of the supernatural powers accompanying the passing of this truly great man. Some still affirm that this king's death was presaged by the approach of a great shoal of fish to the coast of Tongatabu. At Kolovai, in western Tongatabu, the village of the high chief Ata, are several casuarina trees where the flying-foxes are protected by a *tabu*. These trees with their clus-

ters of animal fruitage have often been photographed, and are widely known. Tradition speaks of a white flying-fox whose appearance is the sign of the approaching death of Ata. The other flying-foxes give this uncanny visitor wide elbow room. The tradition of the occasional appearance of a white flying-fox is correct, as the present Ata has seen no less than three—the last no longer ago than last year. This last one, maimed by a broken wing, fell into the possession of Ata himself, who was tending it, purposing on its recovery to present it to the queen, but unfortunately dogs or pigs snipped its vital cord. Ata, who is a very robust and athletic man in young middle life, has manifested no alarming symptoms as a result of being honored by a visit from the ominous creature. A white flying-fox figures in an old story as being used for divination by Bunga, chief of Boha in eastern Tongatabu.

Mr. W. H. Murley of Haapai and Mr. Gifford of the University of California have severally come across instances of fog being regarded as ominous of the death of a chief. Difference of opinion evidently prevails as to the rationale of this portent. Mr. Murley, who is exceptionally well versed in Tongan custom and tradition, speaks of a mist on the sea as ominous, whilst very good native opinion has assured me that the mist only presages evil when it is over the land. Several birds are also ominous. Should a traveler find a kingfisher persistently flying about him, that is a warning to relinquish his journey and return home. The hooting of an owl in the evening near a dwelling is the publication of the pregnancy of a woman in the house. The crowing of a cock in the afternoon (perhaps early evening) is a harbinger of evil unless he be answered by another cock. The crying of the rail at night is an omen of death, and the direction of his flight indicates the place in which the doomed person shall be buried. Mr. Murley notes that as he was sitting with a native a kingfisher entered the room, and his native friend became very uneasy at this circumstance as a portent of evil. Not only the kingfisher is thus ominous. Mr. Murley's friend informed him "that evil spirits come in with the rubbish, and lizards and rats as well as kingfishers." A similar instance came under my own observation. A *fulcheu* (*Ptilotis curunculata*) came into my room, and a native

girl who saw it told me it was a sign of bad luck, without however appearing to attach much importance to the matter. It is not clear whether her unconcern was due to her enlightenment, or to indifference to my fate, or to the hope that being a foreigner I should be able to pull through all right.

MANA OF MEN AND INSTRUMENTS

These manifestations in the seen world of purposes of the unseen world are mana. These are merely a few examples picked up here and there, and doubtless the list could be much extended. But supernatural power may also reside in a tool or weapon and become a mighty instrument in the hand of man. The club or spear of a great warrior, for example, is the abode of mana. The club of the chief Vahai was so charged with mana that it could not keep still, but was continually agitated by convulsive movements. Vahai kept this formidable weapon wrapped in a mat in his house and on one occasion sent a man to bring it to him. The messenger could see no club, only a bundle of mat agitated by an apparently living body, and returning to the chief told him that the only thing in the house was a child wrapped up in matting. The supposed child was of course none other than the club with its high power mana, and the man was again sent to fetch it.

Mana could be communicated from one person to another. If a weapon in which resided this supernatural force were borrowed the owner laid it across the open palm of the borrower, and then, getting a piece of the stem of the banana tree, rubbed and squeezed it in his own hands, thus expressing the juice. Then he rubbed the banana stem over the weapon and the open hand of the borrower. Vahai, the owner of the club just mentioned, conveyed to another chief, Takai, his own martial courage and prowess by performing a like operation upon his body. In these examples the warrior himself would seem to be primarily the source of the mana, thence conveyed to the weapons which he victoriously wielded; but from other statements it appears that the weapon itself might receive an inspiration of mana direct from the gods. In the account of the voyage of the missionary ship *Duff* weapons are spoken of as placed in temples to

obtain the coveted power: "From this we passed to the other large house which . . . was sacred to the God of Pretane, and in which old Mumui sleeps when indisposed, in hopes of a cure. On the floor were four large conch shells, with which they alarm the country in times of danger: and on the rafters were placed spears, clubs, bows and arrows, to receive from their imaginary deity supernatural virtue, to render them successful against their enemies." The Tongan philosopher was doubtless little troubled by questions as to whether the man gave the weapon the mana or the weapon gave it to the man. Traced to its ultimate source it was ever the gift of the gods.

APPARITIONS

The mana was occasionally a mysterious visitor from the other world. As an example it was said that a man might suddenly see the supernatural personage in his boat. The boatman would treat the apparition with the greatest respect, and set off home with as little delay as possible, convinced that some mishap had befallen. The recipient of such a visit would consider it a mark of divine displeasure, and would ask the sprite what wrong he had done, and why he was angry with him.

Mr. Murley's manuscript contains concrete examples of supernatural visitations. In July, 1909, on the night before the death of Maecaliuaki, a great chief, at the time governor of Haapai, a man and his wife who were fishing on the island adjoining that on which the sick chief lay at the point of death were much alarmed at the sight of a sailing-boat, brightly illuminated with various colored lights, rapidly approaching from the southeast. This was of course a mana of Maecaliuaki's death. That year of 1909 was fertile in portents and fortunate in chroniclers, for another of Mr. Murley's informants told him that in that same month of July, 1909, a small boy in the island of Niua Foon received a visit from a stranger who asked him if he knew the reason of the frequent earthquakes. The child confessed his ignorance, pleading his extreme youth. With the sinister words, "Then thou wilt know, for in the month of September you people will not be able to eat for something dreadful will occur," the stranger departed as abruptly as he had come. As he turned to go the boy

was startled to see that he had wings. This last touch is probably due to the influence of the Bible. Like a wise soothsayer this visitant, though so precise with regard to months, allowed himself latitude in years. In September, 1912, there was a volcanic outburst in Niua Fooou, though not very serious and unattended by loss of life. This doubtless is a suitable event to carry the responsibility of the doleful vaticination regarding the month of September.

DIVINATION

The fact that supernatural forces and beings manifest themselves through material agencies would invest with importance the office of those who were skilled in reading the signs. One Tongan stated that those who had no god to apply to had recourse to a diviner (*tongafiji*), adding the interesting detail that there was aruspication by examination of the blood of animals. Another said that he thought that each god had his own diviner, but the most trustworthy statements show no evidence of a class of diviners attached to the gods apart from the priests. A certain cowrie shell god used to give indications of his will by movements, as by standing up on end. War clubs, presumably those kept in the temples, were consulted on the expediency of going to war. If the club shook that was the god giving his vote for war, but if it remained still that was a declaration against the opening of hostilities. Whilst, however, the interpretation of the will of the gods was the function of the priests, there were diviners (*tongafiji*) who, without being priests or being attached in any special way to a particular god, were able to see what was distant in time and space. The word *kikite* which is used of divination and foretelling seems to contain the same root as the word *kite* which is used of the appearance of anything at a distance, particularly of land showing up when one is out at sea. I have not been able to discover that these diviners were reputed to be inspired by any god, but they seem merely to have seen and declared things by some inward light of their own. A rather circumstantial account is preserved of a famous soothsayer named Hema who knew from the island of Eua the progress of a single-sticks match in Tongatabu in which a local champion was opposed by a mighty fighter from Eua. Hema kept the Eua people posted

on the progress of the contest with the promptness and certainty of a wireless installation and had the melancholy duty of informing them of the defeat of their own champion. His best remembered exploit was that of telling a chief the time at which a pet bird, which had flown away and was many days overdue, would return. Not content with the bald statement as to the day and time at which the chief would again see his bird he gave a detailed itinerary of the home-ward flight.

A rather peculiar idea belonging to the same range of conceptions is seen in the power asserted to have been possessed by the chief Loau of Haamea in Tongatabu of knowing everything that was going on everywhere. Loau occupies a unique place in Tongan history, for though he is undoubtedly a historical personage and is asserted to have left a deep and enduring mark on Tongan polity, no place is assigned him in any of the known chiefly families. He came none knows whence and departed none knows whither. His name is connected with the small district called Haamea near Nukualofa, but the spot within Haamea on which he lived is named Maananga, and it is said that quietly at home at Maananga he knew all that was going on elsewhere, whence the word *toka-i-maananga* (known in Maananga) is used of omniscience, and is so used today in Christian worship.

In passing it may be noted that the Tongans assert that there have been navigators so skilful that they could tell their whereabouts when out of sight of land by dipping their hands into the sea and scooping up a little of the water. Looking at the sample of ocean the gifted mariner would say "This is the sea of Vavau," "of Tongatabu," and so forth, and thus get his bearings. The last man who possessed this power has not been dead many years.

The old story of Muni of the Torn Eye relates that Bunga (Coral), a chief in the east of Tongatabu, had a white flying-fox which he used for divination. When Muni, whose legendary exploits are strongly reminiscent of those of the god Maui, visited with hostile intent the home of Bunga the latter was out at sea fishing. His flying-fox at once flew out to him, and Bunga, suspecting that matters of grave import were afoot, set himself a sign whereby he should know by the part of the boat on which the creature settled whether

the omen were good or evil. The portent was of bad tidings, and Bunga returned to shore with all possible speed to find that his harem had been ravished (success in the feats of love, as in those of war, being here as elsewhere a mark of the legendary hero), and two great kava plants which had stood near his house torn up and carried away. Bunga pursued Muni, but in the contest which followed he was defeated though not slain.

Old travelers mention a wooden bowl used for divination. The Introduction of the *Voyage of the Duff* in referring to Tasman's visit says, "An elderly chief who seems at that time to have had sovereign authority . . . was highly gratified by the presents made him. Among them was a wooden bowl, probably the same that long afterwards was used by the sovereigns of Tongataboo as a divining cup to convict persons accused of crimes; and the same homage which is rendered to the sovereign when present was paid during his absence to the bowl, as his representative." Later on in the same Introduction it is stated that the king, dining with Captain Cook on board the latter's vessel, was presented by him with a pewter plate, which he said he would substitute for the bowl "which had before sustained the offices of chief justice and viceroy." This pewter plate was still in use at the time of Mariner's residence in Tonga, and Mariner speaks of it as used to remove the tabu from those who had come in contact with the Tui Tonga. "If anyone is tabooed by touching the person or garments of Tooitonga, there is no other chief can relieve him from his taboo, because no chief is equal to him in rank; and, to avoid the inconvenience arising from his absence, a consecrated bowl (or some such thing), belonging to Tooitonga, is applied to and touched, instead of his feet. In Mr. Mariner's time, Tooitonga always left a pewter dish for this purpose, which dish was given to his father by Captain Cook." Probably the account of the bowl or dish representing the Tui Tonga in other affairs besides the removal of tabu is correct. It should in any case be fairly easy to avoid incurring tabu by contact with the Tui Tonga's person during his absence.

Augury of an informal sort was often resorted to much as it is by some Europeans. The first native Christian teachers on their way from Tongatabu to Haapai, which was still heathen, set themselves

as a sign that if they met a certain man wearing a ragged loin-cloth they would know that they had to expect opposition. During the time when Tautuaahau (King George I) was hesitating between Christianity and heathenism a shark came alongside the boat in which he was one day sailing. He seized his spear and made him throw an augury. If he missed, the shark was the god Tautua-tahi (Tautua of the Sea), but if his aim went true then it was just a shark. He missed, and thereupon threw into the sea two native Christians who were with him. The ancient Tui Tonga, Kauulufonua, in the midst of his victorious career, declared on the eve of battle that in the coming fight his followers should know whether his prowess were the effect of his own might or of the protection of a god. If he were wounded in front he owed his victories to the god, but, if behind, to himself. The event showed that he owed his successes to his own courage and skill.

Mariner relates that the spinning of a coconut and observing its position when again at rest was a common method of interrogating the unknown, particularly as to the fate of sick persons. An instance of this has already been mentioned.

WITCHCRAFT

Something has been said of magic when speaking of tabu, but a few further notes may be added. A non-malevolent but extremely disgusting example of sympathetic magic was related to me by a friend. On one occasion whilst he was at sea and exceedingly seasick an old native, unable any longer to endure the sight of his distress, begged to be allowed to drink his vomit as a sure way of checking his sufferings. In my friend's case the mere suggestion threatened to be effective by depriving him once and for all of all the organs by virtue of which a man can be sea-sick.

But given magic there naturally follows man's effort to gain magical control over his fellows. The usual terms applied to the black art in Tonga are *hangatamaki* and *fakalouakau*. An excellent note on the former term is contained in Mr. Murley's manuscript. He points out that the word *hangatamaki*, which is very freely used in descriptions of illness, covers a large range of disorders, principally of the

boil and ulcer sort; that further there are different individuals who specialize in the cure of different diseases. Should a man desire, for example, to put a tabu on his plantation, he will go to a person who has the reputation of being able to cure some sort of hangatamaki with the request that this medicine man (or woman) assist him with his art. The practitioner then makes up little bundles of medicine and hangs them about the premises it is desired to protect. Should anyone, even the owner, dare to break the tabu and touch anything on the property he will be afflicted with the special hangatamaki in which the medicine man consulted specializes, who again is alone able to cure these punitive visitations, which he will be quite ready to do—for a consideration. When it is desired to remove the tabu the owner and the medical practitioner together go and take down the packages. The practice of putting a plantation under the protection of a shark god has already been mentioned.

In 1917 a man died in Tonga as the result of the black art as practised on him by a man of Fiji. In this case the witchcraft was described by the term fakalouakau, that is "by a leaf," or "making a leaf." It seems that a year or two previously the unfortunate victim had been on a visit to Fiji, and had been put under the spell of fakalouakau by a native of that country. Report hath it that contemporaneously with the death of the Tongan the maleficent Fijian also met his own end. One method of practising fakalouakau is to get something which has been in close contact with the person on whom it is desired to operate, e.g., nail-parings, and wrap it up and bury it. As the buried object rots a sympathetic disease will appear in the victim. One man in discussing these matters drew his examples entirely from Fiji. He said that in Fiji a man would take a piece of young leaf shoot and chew it, muttering the while the name of the person he wished to injure. It is dangerous for anyone to come in contact with such a fragment of leaf after it has been spat out; and the basket in which the Tongan medicine to cause the hangatamaki is kept is likewise a source of peril. This man added the further information regarding the black art amongst his neighbors of the Fiji group that there one may cause foot trouble in an enemy by stabbing his foot-prints. A Fijian after drinking a coconut should

split it open before throwing it away. An unsplit nut which had been drunk would be a great find for the medicine man who could use it to work spells on the drinker; but by opening it up one allows the emanation from himself which entered at drinking to escape. One is inclined to suppose that amongst the Tongans the Fijians enjoyed a sinister reputation for preëminence in the black art.

POSSESSION

An interesting comparison with Tongan belief is furnished by a letter from the Rev. S. W. Brooks to the *Methodist Magazine* (1867, Pt. I, p. 462) written from Bue, Fiji, in August, 1865:

Among the company there was one Abraham, a strange-looking man, perhaps fifty years old. He was covered with remarkable excrescences, varying in size from a pea to a fowl's egg. On questioning the simple-minded chief as to the cause of this, and the age of the man, I made out these two remarkable things: 1. That the devil was the cause, and it was because his father had given his mother a hatchet before the child's birth; 2. That he was a thousand years old.

The devil gets rather more than his due among primitive men.

The belief in demonic possession still obtains more or less amongst the Tongans. A form of hysteria is in particular associated with a diabolic visit. There is a credit, however, to be entered against all that is charged against the mischievous pranks of these other-worldly visitors. A man, partly of Tongan and partly of Fijian blood, relates that in Fiji there are those who are possessed by various gods, and whose supernatural power thus acquired is used for benevolent ends. They form a detective corps d'élite, of infallible efficacy in the tracing of stolen goods. Nor is their medical practice less availing. The fact that they sometimes console the patient with the assurance that he will die should be reckoned an indication of honesty rather than a confession of impotency. Their practice is clairvoyant diagnosis rather than magical healing, as they give practical assistance to the sick, sometimes by prescriptions of their own and sometimes by recommendations as to where they may obtain treatment. The narrator added that these possessed men and women were amongst the most zealous Christians, and noted for the exemplary goodness of their lives.

CONCLUSION

However great a wanderer a man may have been during his lifetime it is amongst his own kin that he wishes to sleep his last sleep. The gods of a country not his own would resent his being laid in their soil and would attempt to drive him away. The unlucky exile, therefore, would appear to his relatives in dreams and upbraid them for their unkind behavior in leaving him to the fury of such persecutions, and would probably soon worry them into making the desired transference of his ashes. It can be very rarely, however, that the deceased is driven to these desperate measures, as the Tongan observes the most scrupulous care in the disposal of his dead. There is a curious story of one who left his body and visited Bulotu (Paradise, Hades, Abode of Hikuleo). He was absent some time, and on returning to the spot where he had left his body found that his friends, despairing of his ever again animating it, had buried it. Since then he has wandered a discarnate spirit, known as a god in Tonga, Fiji, and Samoa under the respective names of Fehuluni, Tuihaatala, and Moso; and with this disembodied vagrant we shall for the present leave the subject.

Some acknowledgments of indebtedness have been already made in the text, but in closing these notes I desire to acknowledge my special obligations to my friend and colleague the Rev. John Havea, Head Master of the Tubou College in Nukualofa, whose intelligent interest in all that concerns his race, and courteous patience in trying to make it intelligible to the foreigner, have equally made me his debtor.

TUBOU COLLEGE,
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A PRELIMINARY REPORT ON THE SO-CALLED "BANNERSTONES"

By JOHN LEONARD BAER

FOR the past half century American archaeologists have been amazed at the beauty and puzzled over the use of certain problematical forms left by primitive men about their camp sites and buried with their dead in eastern North America. From Ontario to Florida, from Maine to the Mississippi Valley, have been found hundreds of beautifully wrought and highly polished pierced objects of stone somewhat resembling the drilled stone axes of the Old World. Here, however, these artifacts are usually of too soft a material and of too delicate workmanship to be weapons, tools, or implements of practical use. The carefully selected material, the elegant and symmetrical shape, and the high polish of these relics have led many to believe that their use was of a ceremonial nature.

Many fanciful names such as bannerstones, ceremonial axes, maces, butterfly stones, thunder-bird emblems, totems, whale-tail emblems, baton or sceptre heads, equipoise stones, and mesh gauges, have been applied to these mysterious relics. The name bannerstone, applied by Dr. C. C. Abbott, is the one most generally accepted because of its priority and because of the fact that most of the stones seem to have been shaped and drilled for mounting upon handles so as to be carried during ceremonies as standards or banners.

In support of this name, is the discovery of a cache of three bannerstones all mounted upon engraved stone handles about a foot in length. They were plowed up in a field near Knap of Reeds, Granville Co., N. C., in the year 1908. One of them (fig. 74. a) has been on exhibition in the North Carolina historical collection at Raleigh, N. C., for a number of years and was discovered by Mr. W. E. Myer who kindly brought the knowledge to the writer's attention. He described this interesting find as follows:

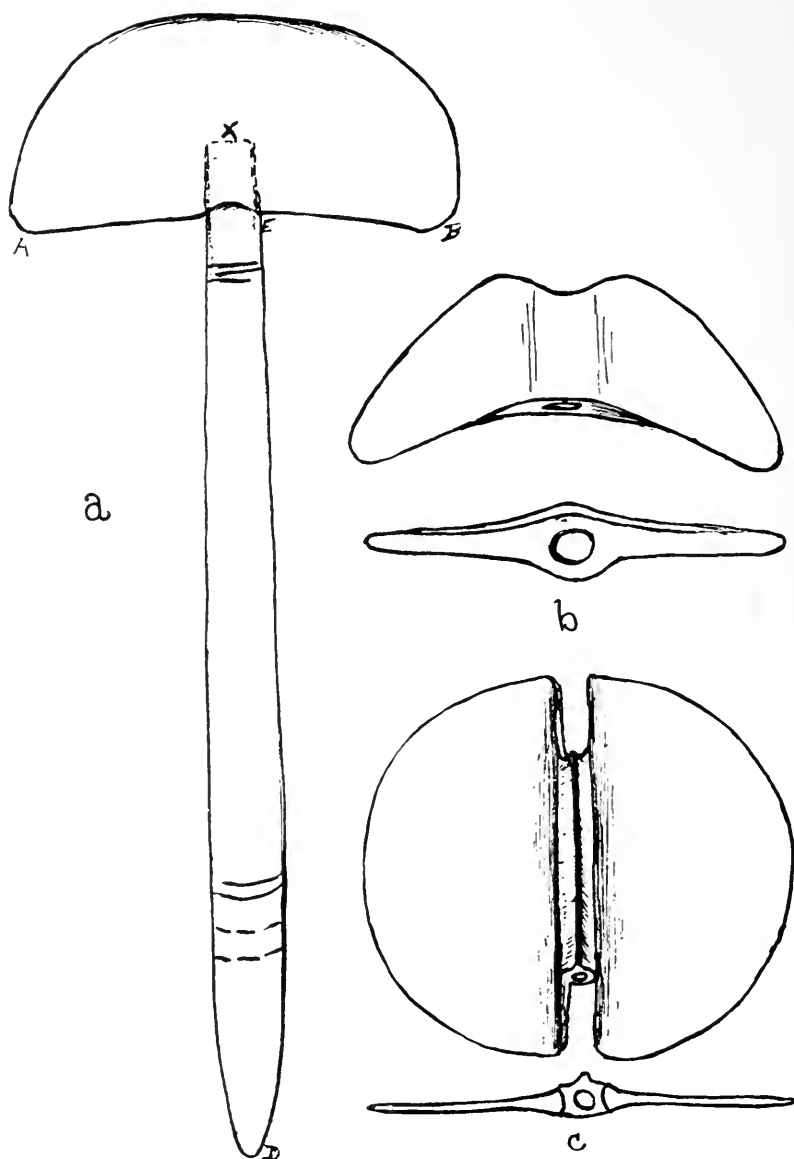


FIG. 74.—Bannerstones (one-half natural size) from: a, North Carolina; b, Pennsylvania; c, Florida.

There is one banner stone mounted on a stone staff . . . in the above collection. The material of both the banner stone and staff is a micaceous shale. The material is coarser in the banner stone than in staff. Staff about $\frac{7}{8}$ inch in diameter at largest point, a to b about $4\frac{1}{2}$ inches, e to d about 12 inches. The record attached to this banner stone is: "Three banner stones, all handles complete, plowed up in one spot, in a field on the farm of Mrs. Mary P. Waller, near Knap of Reeds, Granville Co., N. C. Not far away in [is ?] Indian burial mound. Lent by Mrs. Waller." The staff fits the hole in banner stone exactly. It extends to x in the hole. In fact, the staff and hole appear to have been made to fit perfectly by means of turning the staff in the hole and thus grinding to a more perfect fit. This grinding has some slightly modern appearance, as if people handling it had turned it somewhat in the hole. But the modern grinding is not sufficient to hide evidences of the old aboriginal grinding.

The above record has been substantiated in letters from Mrs. Mary P. Waller and Col. Fred A. Olds. Mrs. Waller states: "These banners were plowed up together. The handles were in two, but one handle was broken and apart from the head. One of the perfect stones and the broken one have been lost." Col. Olds adds to the above information, "the handle is well made and slightly ornamented with rings." The writer is indebted to him for a photograph of the specimen from which the illustration was drawn. This find strikes the writer as one of the most important bearing upon the use of the bannerstone.

While the material used for making bannerstones was usually slate, ribbon or colored slate preferred, many other materials were used such as shell, steatite, shale, serpentine, diabase, granite, quartzite, jasper, crystallized quartz, rose quartz, or any other stone which was capable of taking on a high polish and reflecting brilliant or pleasing colors. Mr. Clarence B. Moore has in his remarkable collection at the Academy of Natural Sciences, Philadelphia, a beautiful bipennate specimen made of shell (*Strombus gigas*) which was found in Volusia Co., Florida. In the same collection is a butterfly-shaped piece made of crystallized quartz, found near Red River. One wing has been broken off near the perforation and the fractured surface carefully polished, showing the esteem with which even broken bannerstones were regarded. A similar unfinished specimen of crystallized quartz from Louisiana is in the collection of the U. S. National

Museum. One wing of it was broken in the making and the hole therefore, was never drilled.

The aboriginal artisan showed great skill in selecting the stone best suited for his particular purpose. As stated above, a large percentage of bannerstones was made of slate, green or banded being preferred to the common gray variety. In choosing ribbon slate, the bannerstone maker showed excellent taste in securing, when possible, blocks in which the bands ran parallel with the cleavage. When these blocks were pecked into shape and polished, the ribbons crossing the gracefully curved wings at different angles made beautifully matched patterns. In addition to its pleasing effect, the ease with which it could be worked was undoubtedly a factor in the choice of slate. While water-worn pebbles were made use of when available, slate, serpentine, and diabase were to the writer's knowledge quarried particularly for the manufacture of bannerstones. Blocks of slate were split into the required shape for transportation to the camp site where they were fashioned with flint hammer stones, scrapers, drills, and polishing stones into beautiful works of art.

Bannerstones are usually of the most artistic form and finish, showing much labor and skill in their manufacture. No other artifacts of the aborigines of eastern North America are more elaborate or more beautiful. The most common form of these perforated, winged objects is that having long, thin, tapering, symmetrical wings, diverging from a mid-rib, through which a cylindrical hole has been drilled longitudinally. The measurements in centimeters of an average bipennate bannerstone are as follows: spread of wings, 14.5; thickness of wings, 1.2; width of wings, 5.15; length of centrum, 5.15; width of centrum, 2.2; diameter of bore, 1.55. Variations of this type are those in which the centrum is longer than the width of the wings, those in which the centrum is shorter than the width of the wings, those in which the wings are longer and narrower and curved, those in which the extremities of the long, curved wings are knobbed, those in which the wings are shorter and broader, those in which the wings are thicker and heavier, those in which the wings are oval, and those in which the outer extremities of the wings are parallel.

Certain names have been applied to these various forms such as bipennate forms, butterfly forms, lunate forms, knobbed forms, crescent forms, double crescentic forms, reel forms, oval forms, battle-axe forms, geniculate forms.

Lack of space and the expense of illustration forbid the use of many drawings to illustrate the various forms of bannerstones. One remarkable specimen from Florida recently acquired by the U. S. National Museum is especially deserving of notice and is illustrated in figure 74, c. It is nearly circular in shape and displays a higher degree of workmanship than any other specimen in the Museum collection. The length of the centrum is only about one-half the width of the wings and has a spine running the length of it on one side. The measurements of the stone in centimeters are as follows: spread of wings, 14.2; width of wings, 13; thickness of wings, .7 to .3; length of centrum, 6.8; thickness of centrum, 1.9; thickness of rear wall of centrum, .2; thickness of front wall of centrum, .4; thickness of spine of centrum, .2; diameter of bore, 1.1. This beautiful and fragile bannerstone could have survived no other than ornamental or ceremonial use.

Bannerstones are rare as compared with the hundreds of thousands of arrowheads, thousands of knives, axes, celts, and hundreds of pipes, yet they are much more abundant than our early archaeologists supposed. Specimens illustrated by the numerous writers upon the subject, some of which are herein figured, give an idea of the general distribution of the various forms unearthed in the eastern part of North America. Mr. Moorehead, in his *Stone Ornaments of the American Indian*, has collected a store of information in regard to the distribution of problematical forms. Many small collections have escaped notice, however, and we may expect many beautiful specimens yet to come to light. The writer recently visited a small town where he saw a number of fine bannerstones which have never been described or listed.

Many perfect bannerstones have been found in graves, but for every perfect one picked up about abandoned camp sites, a dozen broken ones have been found. Many of those broken in prehistoric times have been drilled at right angles to the original perforation as

if intended to be worn as pendants. Bannerstones were so cherished and considered of such importance that scarcely ever was a broken piece discarded by the fortunate possessor. Possibly they were carried in the medicine bag as "good medicine."

Judging from the bannerstones illustrated by the numerous writers upon the subject and from specimens exhibited in a number of museums and private collections, we observe that the bipennate form prevails throughout the northeast section of the bannerstone area; oval forms and reel forms throughout the southeast; reel forms, butterfly forms, crescent forms, double crescentic forms, and geniculate forms throughout the mound area; butterfly forms, knobbed crescentic forms, battle-axe forms, double crescentic forms, and geniculate forms in the northwest. Of course there is much overlapping of areas and unusual forms are occasionally found in almost every locality. Whether this is due to a system of trade among the Indians, or whether shapes were copied from those seen when on the trail or the warpath, is an interesting question.

The finding of characteristic forms in widely separated areas is also interesting and may assist in tracing prehistoric movements of the Indians. A remarkable instance of this kind is the finding in Florida of certain battle axe forms typical of Wisconsin.

Archaeologists have spent much time trying to figure out the method and sequence in the manufacture of bannerstones. Mr. C. C. Jones, Mr. David Boyle, Mr. Joseph D. McGuire, Mr. Charles E. Brown, and Mr. Warren K. Moorehead have all pointed out interesting stages in the manufacture of these mysterious artifacts. In speaking of an unfinished specimen, Mr. Boyle said, "Instructive as are all unfinished specimens, they are particularly so when they possess traces of the various steps taken to bring them into form." Even more instructive is a series of unfinished specimens from the same workshop, made of the same material, and possibly wrought by the same artisan. Such it has been the writer's good fortune to discover.

On Mt. Johnson Island in the Susquehanna River about a mile above Peach Bottom, Lancaster Co., Pa., over three hundred unfinished and broken bannerstones of slate have been found. These

rejects, in series, show all stages of development from the split blocks brought from the nearby quarry to the finished artifact. A number of such series have been made from the large quantity of pieces. The specimens herein illustrated have been accepted by the U. S. National Museum for display in the Pennsylvania collection. An interesting feature of the situation is that the ledge of slate whence the blocks must have come crosses the river only a few feet below the island. The fact that the exposed ledges on either side of the river are below the island convinces us that any blocks of slate found on the island must have been taken there for a purpose, and could not have been deposited by natural agencies.

Diligent search has been made about the outcroppings of slate in both Lancaster and York Counties for indications of primitive quarries. The lack of proof of work having been done at these more distant outcroppings leads one to assume that the bannerstone-maker secured his material from the nearby outcroppings in the hills on either side of the river, although all evidences have been obliterated by the white man in producing the famous Peach Bottom roofing slate.

One of Mr. Moorehead's party on the Susquehanna survey gathered information concerning this Indian workshop on Mt. Johnson Island from the writer, who also furnished him with a number of unfinished specimens. This account as published in *Ornaments of the American Indian* has been badly garbled. It reads thus: "Fishing Creek, Columbia Co., Pennsylvania,—On *Mountain* Island there seems to have been a long-settled Indian village in which quantities of relics have been obtained. The spot is most interesting because Indians seem to have gone to the mainland to the east of the island and there obtained slate which they brought back to the island and manufactured into ceremonial objects such as bannerstones and gorgets. The party found a large number of fragments ranging from plain slabs of slate to bannerstones in all stages of completion. Some examples of the unfinished objects, although broken, were found. It is a matter of common knowledge to the farmers in this neighborhood that these objects are abundant on *Mountain* Island." The island has from early historic times been known as *Mt. Johnson*

Island. Fishing Creek is about four miles up the river from Mt. Johnson Island, and, like the island, is in *Lancaster Co.*, Pennsylvania, instead of *Columbia Co.*, which is more than a hundred miles up the Susquehanna.

The following observations on the manufacture of bannerstones have been based upon specimens of slate from the workshop on Mt. Johnson Island. Similar specimens of serpentine and diabase from other sources are being reserved for further study to illustrate a future report upon the subject.

A large number of split slabs of slate an inch or more in thickness and similar to figure 75, a, have been found on the island. Some show slight evidences of the use of stone hammers in smoothing up the ends, but most of them are rough, parallelogram-shaped blocks of slate just as they were taken from the quarry. These slabs carried to the island by the Indians must not be confused with larger blocks of slate carried there to protect the shad fishing battery against the wearing away of the lower end of the island.

Figure 75, b, shows the plan and edge views of a roughly-shaped block from which about one-third has been broken. The block shows the use of the stone hammer in shaping the edges, but no work has been done on the sides.

Figure 75, c, shows the side and edge views of a roughly-shaped block from which about one-fourth has been broken. The edges have been shaped as in *b* with the stone hammer. The wings are a little better defined than in the preceding specimen. The section to be left the original thickness for the centrum is marked off with a stone knife or other sharp stone. Only a very small amount of pecking had been done before the end was broken off and the blank spoiled for making a symmetrical bannerstone. This specimen is very interesting in that it illustrates the three stages of manufacture on the one specimen. It also suggests a division of labor. May not the artisan have marked out the design for an assistant, who, by careless pecking, broke the specimen?

Figure 75, d, presents the side and edge views of a partly pecked bannerstone with one wing broken off. This specimen shows the result of pecking with an angular flint pecking-hammer such as those

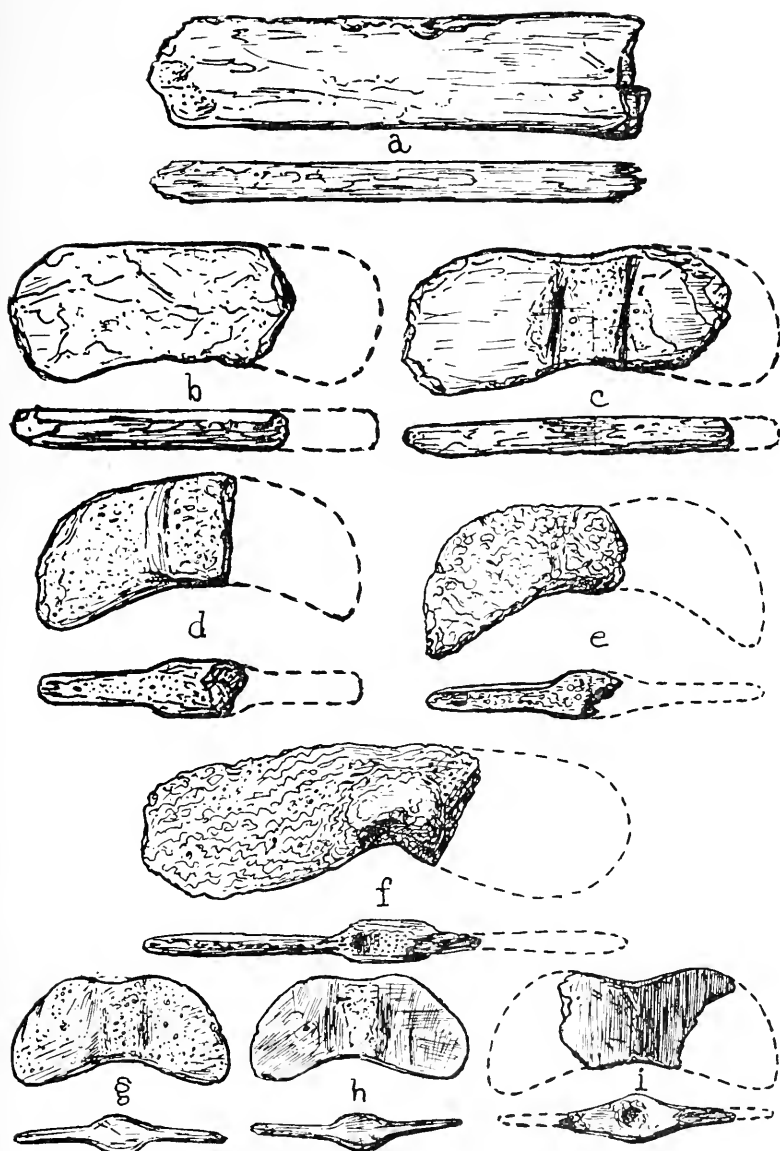


FIG. 75.—EVOLUTION OF THE BANNERSTONE. Plan and side views of the specimens of slate collected on Mt. Johnson Island, Pa., by Mr. John L. Baer, showing stages of manufacture from the rough blank to the finished artifact: a, the rough blank; b, roughly-shaped block; c, block marked for pecking; d, block partly pecked; e, block showing advanced pecking; f, block showing pecking nearly completed; g, block showing pecking completed; h, block showing effect of scraping; i, block showing scraping completed and hole started. Scale about one-fourth natural size.

illustrated in figure 76, e, e'. Quantities of these flint pecking-hammers are found on that part of the island where the unfinished bannerstones are most abundant. Occasionally a jasper or agate pecking-hammer is found.

Figure 75, e, presents the side and edge views of half of a bannerstone showing more advanced pecking. The edge view shows that the wings had been reduced nearly to their required thinness, while the centrum maintained its original thickness. The great number found broken at this stage show with what great care the artisan must have had to perform the pecking. Small indentations were made over the surface of the wings with the sharp projections on the pecking-hammer. Repetitions of this process gradually reduced the wings to the desired thinness. Had the blows been struck upon any surface except that parallel with the cleavage, the slate would have split.

Figure 75, f, presents the side and edge views of a much larger bannerstone, with long expanding wings and a very short centrum. Here the pecking was about completed when an accident broke off nearly half of one wing. This represents an unusually large size for this section of the country. In the U. S. National Museum collection are some very large unfinished specimens from South Carolina and Georgia. These, however, are not made of slate.

Figure 75, g, and figure 75, h, present another very interesting specimen since it shows the result of both pecking and scraping. Figure 75, g, shows the pecking marks on one side, and figure 75, h, shows the scratches on the reverse, evidently made by a flint scraper. While numerous flint scrapers have been found on the island, none were considered sufficiently close to the bannerstone rejects to be identified with the workshop.

Figure 75, i, presents side and edge views of the centrum and parts of gracefully sloping wings showing coarse and finer scrapings and the perforation just started. The finer scraping on one end may possibly be the beginning of the polishing. In a number of specimens the hole has been started before the scraping was finished as if to shape the centrum about the proposed perforation. No holes, however, have been drilled farther than just sufficient to locate them in any of the numerous specimens of slate examined.

Figure 76, a, presents side and edge views of a bannerstone with a part of one wing broken off showing gracefully sloping wings and a well-developed centrum in which the hole has been started with a hollow drill. In harder stone the core is frequently much longer. The same method of drilling was practiced by the aboriginal Europeans in making the perforations in their stone axes.

Figure 76, b, presents the side and edge views of the centrum and parts of the wings of a bannerstone about two-thirds drilled. A portion of one side of the centrum having been slabbed off reveals the core left by the hollow drill. Markings in the cylinder perforations in many specimens indicate the use of sand, and possibly water, in connection with the hollow drill. In all the specimens examined the holes have been drilled parallel with the split of the slate. This seems to be contrary to Mr. Warren K. Moorehead's findings. In his *Stone Ornaments of the American Indian*, on pages 110-111, he states:

Fifth, he made his perforations at right angles to the grain or bands of the stone, which should be noted. The exceptions are rare. If he drilled with the grain, the stone would chip and before he finished the object it might break. Sixth, he drilled the specimen before it was completed, knowing that the drilling was a dangerous process at best, and if he did not prize the specimen very highly, he would not have cared when he drilled it.

It is true that drilling at right angles to the grain or bands of slate would have been easier, but that would have necessitated pecking against the cleavage of the slate. Anyone familiar with the methods used in working slate knows that it takes very little hammering against the cleavage to split the slate. The many bannerstones with beautifully matched patterns are a further proof that the holes were drilled with and not perpendicular to the split of the slate. Bands or ribbons do not always run parallel with the cleavage of slate. In this case there are beautiful markings but no matched designs.

Mr. Moorehead pictures a number of specimens showing the method of boring with a hollow drill. Mr. C. C. Jones, the earliest American writer upon the subject of "Perforated Axes," in his *Antiquities of the Southern Indians*, comments upon the drilling process as follows:

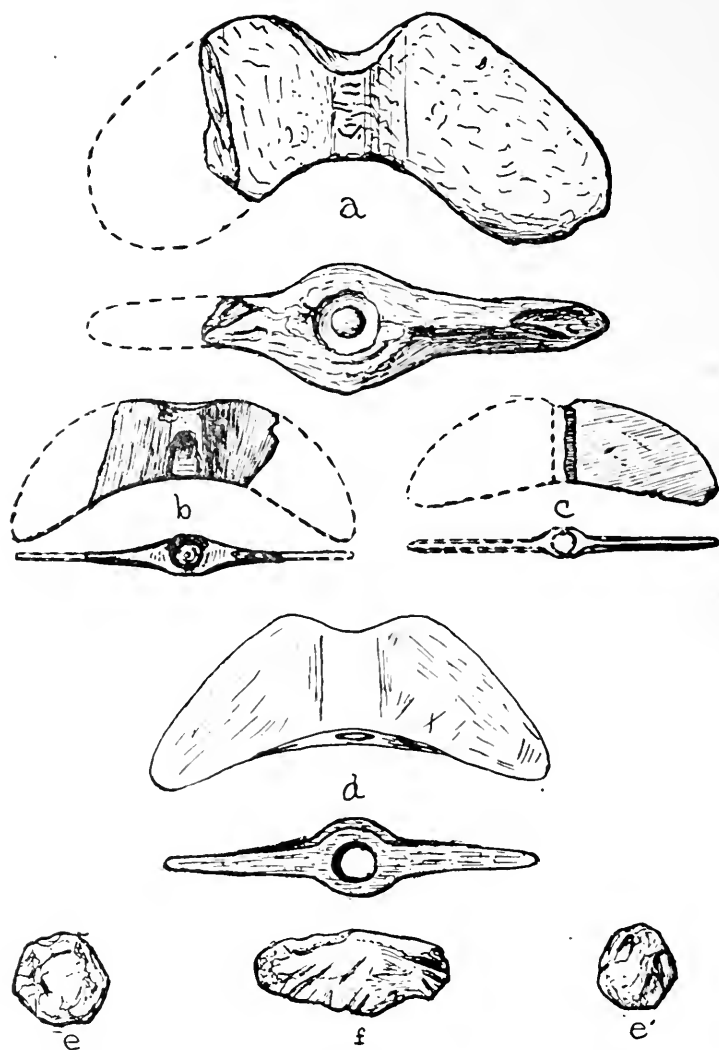


FIG. 76.—EVOLUTION OF THE BANNERSTONE (continued). a, plan and side views of specimen showing hollow drill core; b, plan and side views showing half-completed hole; c, plan and side views showing wing of polished bannerstone; d, plan and side views of finished bannerstone; e, e', flint pecking hammers; f, sandstone polishing implement. Scale about one-quarter natural size.

Of several specimens now on the desk, one is entirely finished and polished, but lacks the handle hole. A second, pecked into the desired shape, but not yet ground, indicates on the nether side the commencement of the drilling process. Upon careful examination of a third, it will be perceived that the drill-hole has been completed only one-half the required distance. A core or nipple, nearly a quarter of an inch in length, appears at the bottom, clearly showing that a hollow reed, aided by sharp sand and water, was the instrument by means of which the perforation was compassed.

Mr. Charles Rau says

It is very likely that the hollow drills of the aborigines of North America were pieces of that hard and tough cane (*Arundinaria macrosperma*, Michaux) which grows abundantly in the southern part of the United States, mostly along the banks of large rivers, and forms at present an article of trade, being used for pipe-stems and fishing rods. A piece of this cane, from which the knotty joints have been cut, forms a regular hollow cylinder sufficiently strong to serve as a drill. I learned from Dr. Davis that many years ago a stone pipe with an unfinished hollow, partly filled with vegetable matter, was sent to the late Samuel P. Morton of Philadelphia. When subjected to a microscopical examination the vegetable substance exhibited the fibrous structure of cane, and thus appeared to be a remnant of a drill broken off in the bore.

Figure 76, c, presents plan and edge views of half a polished bannerstone. This specimen is a fair sample of the many wings found about the workshop and elsewhere on the island. Many of them have doubtless been broken by the agency of frost after being plowed up and exposed near the surface, while some may have been broken even during the polishing process. In most cases the polishing seems to have been finished at least after the hole had been completed. A number of abrading stones have been found about the workshop. The one represented in figure 76, f, shows numerous grooves and angles and is of excellent grit.

Figure 76, d, shows a well made and beautifully polished specimen. While of the same general shape as most of the reject pieces found about the workshop, it is much smaller than the average. The smallest unfinished piece found here is exactly three inches in length and three-fourths of an inch in width.

In the study of these slate rejects, certain conclusions have been

reached. First, the slate was split into blocks of suitable dimension and not made into "turtle backs" for transportation. Second, the blocks were carefully marked out with the design of the pattern before the pecking process began. Third, the holes may have been drilled in some rare cases even before the pecking was finished, but the usual procedure was to indicate the hole so as to shape the centrum symmetrically about it and finish the scraping and grinding before drilling the hole to any considerable depth. Fourth, just as the early archaeologists were deceived about the rarity of bannerstones, so did they overestimate the time and patience necessary to fashion these beautiful artifacts. In support of this conclusion, Mr. Joseph D. McGuire has on exhibition in the National Museum a catlinite bannerstone made by himself, using the same primitive tools with which the prehistoric artifacts were made. The time required for making the specimen is itemized as follows: pecking, 3 hours; scraping, 1 hour; rubbing and polishing, 3 hours; drilling, $3\frac{1}{2}$ hours. What were ten and a half hours to primitive man?

The mystery surrounding the origin, significance, and use of these so-called bannerstones makes their study all the more interesting. No record has appeared of early explorers having seen such objects among the Indians of post-Columbian times. No reference to prehistoric artifacts which can be identified as bannerstones has been discovered in Indian cosmology, mythology, or folklore. Thus a number of theories have arisen as to the possible use of these problematical forms. While a few still claim that they were specialized implements, most archaeologists agree that they must have been for ceremonial purposes. Many of the forms, and especially those made of fragile material such as scatite, slate, shell, etc., would not have served for any rough or even mechanical use. Neither would mere implements have been so symmetrically wrought or so highly polished. The specimen with a stone handle described at the beginning of this article shows no evidences of having been used as a weapon. Nor have the wings of this or any other bannerstone within the writer's knowledge been reduced to cutting edges. The polished handle with incised rings surely places this specimen in the ceremonial class. The fact that a bannerstone as crude as this one should have been

used for ceremonial purposes should bespeak a high and important place in religious festivals for the more beautiful and more delicately wrought specimens. Space does not permit entering into the numerous theories as to the origin and significance of the bannerstone. Until more material is available, more argument would be mere speculation, but whatever the various types of bannerstones may have symbolized, it is quite evident that they were to be mounted upon handles for ceremonial use.

DELTA, PA.

EGYPTIAN MEDICINE: A CRITICAL STUDY OF RECENT CLAIMS¹

BY T. WINGATE TODD

THERE is no people whose doings and whose thoughts are more fascinating to investigators of today than the ancient Egyptians, and modern writers, in their boundless enthusiasm, have ascribed to them thoughts and interpretations, even scientific practices, far beyond their deserts. The human race is not singularly inventive or piercingly discriminative by nature and the Egyptians in spite of their wonderful civilization were no exception to this rule. Before we accept the advanced views on hygiene and contagion, the skill in surgery and great development of medicine with which this people is credited, it is incumbent on us to examine the evidence with the greatest care.

In ancient times medicine was bound up with religion and magic. In one individual were frequently combined the functions of the priest, the physician, the magician, the interpreter of dreams, and even the kingship. Man's attitude toward disease only slowly changed from that which he adopted towards the other mysteries which surrounded him (2). For long ages disease and its cure were ascribed either to influences of a supernatural character calling for propitiation or to beings of a human or non-human kind who could be compelled or exorcised.

Only very gradually did materialistic conceptions supervene upon this early interpretation. With this subject Rivers has recently dealt very clearly (2) and has shown that when such materialistic views did make their appearance they were usually related either to animals or to an altered character of the blood. From the former arose the idea of the causation of disease and death by such creatures as worms and snakes (take for example

¹ Address delivered before the American Historical Association at a symposium upon the History of Science, Cleveland, December, 1919.

the setting up of the serpent standard by Moses) and from the other the now obsolete humoral pathology.

Egyptian history covers the period of transition from the earlier animistic to the later materialistic interpretation. It is therefore evident that this period in human thought was not conducive to any real progress in medicine such as many have claimed for this ancient people.

It is not proposed to review the entire period of Egyptian medicine or to deal exhaustively with the subject. Many excellent reviews such as Finlayson's (3) have already been published. The purpose of this paper is simply to call attention to certain facts which have recently come to light and to certain methods of attacking the subject recently called into action.

In the first place it is well to differentiate clearly between real Egyptian medicine and Egyptian medicine after it had become more or less permeated by Greek influence.

In Graeco-Roman times Egyptian physicians and Egyptian health resorts enjoyed great vogue. Early in the sixth century B.C. a party of Greek mercenaries with Psammetichus II carved their names on a statue in front of the rock temple at Abu-Simbel. Shortly after this there was founded at Naucratis a Greek factory. But Herodotus's description of his journey to Egypt about the middle of the fifth century B.C. when the country was under Persian rule, gives the first real account of Egypt by an outsider (1). From this time on Egypt was visited more or less regularly by the Greeks especially after Alexander's conquest and the establishment of the Ptolemaic dynasty. From the third century onward, Greek graffiti became plentiful. The first record of a Roman visitor occurs in a papyrus of 112 B.C. From then till the end of the second century A.D. Greek and Roman tourists abounded and the last recorded visit is that of Nikagoras in the Reign of Constantine (1).

During the Graeco-Roman period were produced such works as those of Herodotus, Diodorus Siculus, and Pliny and from these writings it has been customary to cull much of the history of Egyptian medicine, but uncritical writings must not be permitted to obscure the evidence yielded by Egyptian monuments and by the actual bodies of the Egyptians themselves.

To cover in chronological order the 4,000 years of the rise, zenith, and decadence of Egyptian civilization in their relation to Medicine seems a less suitable method of presentation than the discussion of historical evidence regarding modern subdivisions of the subject, and I propose therefore to adopt the latter method as briefer and more concise.

SPECIALIZATION IN MEDICINE

In Herodotus we find the following passage: "Each physician applies himself to one disease only, and no more. All places abound in physicians; some physicians are for the eyes, others for the head, others for the teeth, others for the parts about the belly, and others for internal disorders" (4).

Spiegelberg has recently brought this statement forward with two other references as evidence of the high level of specialization to which medicine was brought in Egyptian times (5). The other references are to Sethe and Wilcken. Spiegelberg points out that the title physician for the eyes not infrequently occurs in demotic documents of the Ptolemaic period. It is significant also that Wilcken's reference to a physician for the intestine occurs in a Greek document (Chrestom No. 136). It must be emphasized that during the later period of Egyptian history the Egyptians were probably much influenced by the Greeks and Romans and that true specialization in medicine was of Greek origin.

Diseases of the eye and intestinal disorders are, and apparently have always been, very common in the Orient. Hydrotherapy was a fetish to the Egyptians as is indicated by the frequent allusion to the cleansing powers of water in Egyptian and Hebrew literature and to the number of enemata and douches which we know from the papyri to have been in use in Egypt. A physician whose function it was to cure by enemata was an exponent of a cult rather than a specialist as we understand the term today.

According to Sethe the most ancient reference to a physician for the eyes dates from the time of the Old Empire (ca. 2500 B.C.) but it does not appear convincing to me that this reference is actually to a specialist. There are constant references in Egyptian literature

to Amon as healer of the eyes. Gunn writing upon certain texts of the XIXth Dynasty (1350-1200 B.C.) points out that poetic figures are common in odes and inscriptions to the gods and that two expressions were used for blindness by the workmen of the XIXth Dynasty, namely "to see darkness by day" and "to see a darkness of thy making." "If this means *physical*¹ blindness," says Gunn, "it is very strange that this affliction should occur proportionately so often and at the same time be the only one specified by the victims of divine retribution" (6). It is inadvisable to read too much into this one solitary reference of Sethe's and one should not infer from it specialization in eye diseases any more than one should build up theories of specialization in diseases of the nose from the recorded fact that Sekhet-enankh healed the nostrils of Pharaoh Sahura of the Vth Dynasty. Nor can the claim for specialization be substantiated by collections of prescriptions such as occur in the Ebers and Hearst papyri: this arrangement would be a natural grouping. The occasional reference to special physicians or temples in the Ebers papyrus can not be held to indicate specialization. Hence the enthusiastic statement of Von Klein (7) that "the subdivision of the medical profession . . . must have had a tendency, in some respects, to advance medical knowledge by specializing it" can not be accepted.

GREEK MEDICINE IN EGYPT

A study of the Oxyrhynchus papyri shows that the formality of Egyptian medicine lost nothing from the introduction of Greek, and later of Roman law. Papyri LI and LII, for example, show rigid compliance with formality combined with an entire lack of attention to medical questions (8). This is not the place, however, to discuss the inter-relations of Greek and Egyptian medicine.

THERAPEUSIS

The elaborate therapeusis of the Egyptians dwindles upon critical examination to collections of incantations and weird random mixtures of refuse with roots and other substances some of which latter were indeed utilized with increasing discrimination by the

¹ The italics are mine.—T. W. T.

Greeks and are still to be found in modern pharmacopoeias. Such collections are found in the Ebers and Hearst papyri (9, 10). Both these papyri were compiled from scattered local data between the XIIth and XVIIIth Dynasties (2000-1500 B.C.) by itinerant priest-physicians, and all other extant medical papyri date from this heyday of Egyptian medicine. In interpreting these prescriptions it must be recalled that this was still the age when men believed disease to be sent by the gods, who might be propitiated, or brought by demons, who could be exorcised. The materialistic viewpoint has scarcely as yet attained any foothold. Hence it was the prayer or the incantation which was the important feature of the cure; the prescription was only accessory. The sources common to both these records were collections, largely traditional, gathered by physicians in different towns or attached to different temples. There is nothing to indicate a canonical or sacred character in either although as Reisner points out (10) it was upon some such collection that Clement of Alexandria about 200 A.D. based his unwarranted statement regarding the hermetic books of Thoth.

OBSTETRICS

Obstetrics was not one of the duties of the physician; it was relegated to midwives. Apparently the obstetric stool of the last century has survived with very little modification from early days (9, Plate XXXVII, fig. 1). It is of peculiar interest to note the crystallization and survival of ancient Egyptian birth practices among modern African tribes. The researches of Blackman (11, 12) and Seligmann and Murray (13) upon this subject have not only shown the antiquity and probable origin of these practices among Negroes of today but also have thrown much light upon the interpretation of Egyptian inscriptions and graphic representations, a method of attack which is of particular significance in the interpretation of figures hitherto identified with surgery.

SURGERY

Regarding surgical practices we know that previous to the XVIIIth Dynasty (ca. 1500 B.C.) it was common to incise abscesses

and remove fatty tumors, for specific reference is made to these operations in the Ebers papyrus.

Rude splints were certainly employed at the time of the Vth Dynasty (ca. 2600 B.C.). From mummies of this period Elliot Smith has described cases of compound fracture of the femur and forearm treated in this manner and points out that splints were employed to support the injured limb but without any idea of controlling the fragments (14).

The alleged amputation of limbs depends upon a statement of Larrey, which, as Finlayson points out, is probably a misunderstanding (3). Sacrificial amputation of the foreleg of a living bull calf (15) is the only amputation for which there is evidence in Egypt.

RITUALISTIC PRACTICES

It is altogether an error to classify such rites as circumcision under the heading of surgery. One fallacy of modern writers is to take it for granted, seemingly, that the ancients thought in our terms. Probably nothing was further from the mind of the artist who depicted circumcision upon the wall of the tomb of the VIth Dynasty official at Sakkara (ca. 2500 B.C.) than the idea that he was figuring a surgical operation. Yet, thinking in modern terms, the association of surgery of the extremities with circumcision has been inferred by Müller (16) and it is therefore necessary to review the evidence offered by the drawings themselves.

In the left picture the operator is using a flint of primitive type and the tall youth who is undergoing the rite has his upwardly directed arms held by a man who stands behind. In the right picture a more elaborate instrument is being used and the youth has no supporter. It is altogether inconceivable that the artist has given us two representations of alternate methods. Nor is there any intrinsic evidence in favor of Walsh's supposition that the operator to the left is engaged in breaking a chordee (17).. As in the case of birth rituals, modern Negro practices are of great assistance in interpreting these scenes.

Among the native tribes of East Africa the circumcision ceremony varies considerably in detail and also in the age of the initiates.

Whereas in some tribes boys undergo the rite at 10 or 11, in others the age is as high as 18. Among the most instructive records are those dealing with the ritual among the tribes of Kenya Province, British East Africa (18, 19).

In Chuka the circumcision consists of two operations. At the first the lad squats but holds his arms in the position represented on the tomb at Sakkara and as in that picture also he is supported by a "godfather." The operator cuts off only the extremity of the foreskin. After ten minutes or so the operator again appears and trims off all the remaining foreskin. At this second operation the "godfather" is not present but a warrior sits on each side of the boy, to assist him, support his penis, and check the bleeding. It is impossible to fail to associate these two stages of the Chuka circumcision with the two pictures redrawn by Müller (13, plate 106) in the first of which the "godfather" supports the lad while the operator uses a flint knife and in the second of which the lad is unaccompanied by a godfather and the operator is using a less primitive instrument. The inscriptions relating to these pictures seem to be portions of the ritual and ought not to be interpreted as evidencing either pain or jocularity.

Among the Anwinbe on the other hand the entire ritual is performed at one operation but the technique differs from that in vogue among the Chuka. After the operator has cut off the extreme end of the foreskin he makes a transverse slit across the dorsum and pushes the glans through it so that a ragged pucker of skin is left below. The second detail resembles the operation among the more northerly Meru and at once recalls the end result obtained as far back as late predynastic Egyptian times and represented on the great slate palette of King Narmer. Circumcision is certainly an initiation rite of great antiquity (20).

If the explanation here put forward be the correct interpretation of the two pictures of circumcision may we not go further and eliminate any idea of surgery from the remaining representations, considering them to be parts of the ritualistic ceremonial of circumcision. With this interpretation the inscriptions will perfectly well agree. The attitude of the lad on the extreme right of the

lower figure in plate 105 is not necessarily indicative of pain but is at least comparable with that of the lad awaiting the second circumcision operation in Chuka (18, fig. 3). The figures said to represent surgery of the hand and foot and the opening of boils on the neck and knee appear to me undoubtedly ceremonial. Apart from the improbability of the artist delineating surgery in connection with circumcision and apart from the technical difficulties in interpreting the pictures from a surgical standpoint, there is other evidence against the current view. If the artist had intended to represent a cutting operation in any of these he could clearly have done it as is shown in the circumcision pictures, all the drawings being obviously by the same hand. Again in the Mosaic law part of the ritual of the cleansing ceremony was the anointing of the right ear, the thumb, and great toe (21). That the Mosaic law was an adaptation of Egyptian custom of about 1230 B.C. there is no question and I submit that in spite of the fact that in the Sakkara drawings it is the left thumb and great toe which are pictured the ritual is probably the same.

DENTAL SURGERY

It has frequently been asserted that the Egyptians were skilled in dental surgery. This statement seems to be based in the first place upon the writings of Herodotus (4) and confirmed by the slender evidence of the use of mouth washes (e.g. 9). Again the finding in the mouth of pieces of gilt from facial adornments of the dead has encouraged belief in this theory (22). But Wood Jones has clearly stated that at no period of Egyptian history do the teeth of any body show evidence of the dentist's handiwork (22) and his assertion is amply borne out by most investigators who have experience of Egyptian skeletons. This does not mean that no dentistry was needed among this ancient people, for Egyptian skeletons of all periods and of every social rank show caries, abscesses, and evidence of pyorrhea (24).

Hooton has recently claimed "the existence of a rudimentary knowledge of oral surgery in the Old Empire" (ca. 2500 B.C.) (23), basing his claim upon a single mandible which presents two foramina

above and behind the mental foramen on the right side. One of these foramina lies between the roots of the second premolar and the first molar and the other between the roots of the first molar. Circumstantial evidence is against the drilling of holes in the jaw to evacuate pus from a root abscess among a people who so far as we know did not even extract teeth, let alone perform operations calling for considerable knowledge and skill which such a procedure would imply. And far more convincing than circumstantial evidence is the evidence provided by the mandible itself. For the anterior of the two holes is plainly an accessory mental foramen—much larger than usual it is true and accidentally associated with the extreme anterior limit of the abscess cavity—such as is by no means infrequent in human and especially African mandibles. Further, the posterior foramen bears all the ear marks of a pathological opening through which the abscess has evacuated itself, the pus having caused erosion of the surface of the mandible around its outlet. In the face of these facts, therefore, it is apparent that the evidence in no way justifies us in doubting the truth of Wood Jones's assertion.

The only evidence for artificial teeth is a single case in which a number of teeth bound together with gold wire were found in a *Roman* tomb in Egypt (24). Ruffer asserts that this apparatus was merely for show and not for use since it could not possibly have been employed for mastication.

ANATOMY

As regards anatomy the evidence of the papyri shows that the Egyptians knew of the locations of certain organs but had no understanding of their function. Their ritual obsessed them even in this. The bodily proportions were confined within the rigid canons of their pictorial art (25). We are no more justified in believing that on account of their elaborate scheme of mummification the ancient Egyptians knew any anatomy than we are justified in taking for granted, from their devotion to cleanliness and all forms of "hydrotherapy"—washings, enemata, douches, and the like—that they had any conception of contagion or of the real cause of disease. Alan Gardiner states the Egyptian attitude excellently

when he says "the Egyptians were the greatest formalists the world has ever known; their literature, their art, nay even their history seems to crystallize in given types from which individual variations were few." And this intense formalism was just as true of their medicine as of the other phases of their life.

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THE LINGUISTIC AND ETHNOLOGICAL POSITION OF THE NAMBICUÁRA INDIANS

By RUDOLPH SCHULLER

THE earliest references to the Nambicuára or Nimbiquára Indians known to me are contained in Father João Phelippe Bettendorf's *Chronica da Missão dos Padres da Companhia de Jesus no Estado do Maranhão*,¹ a long account of the settlements of the Portuguese Jesuits among the native Indians of the great Amazonas basin, written about 1698 in the city of Para by the Jesuit father whom I have just mentioned.

"Nambicuára" are referred to as inhabiting the "Sertão" of the Upper Tapajós, a southern tributary of the Amazonas.

The term "Sertão,"² as employed by Father Bettendorf, evidently refers to the region situated between the Tapajós and the river Xingú, a territory unknown at that time to the Jesuit missionaries. Nevertheless, the geographical position of the habitat of these Nambicuáras is in perfect accord with that of other Nambicuára Indians mentioned two hundred years later by several travelers.³

In nearly all maps drawn by Jesuit missionaries in Paraguay during the seventeenth and eighteenth centuries approximately the same region is given as occupied by Nambicuára Indians.⁴

¹ *Revista Trimensal do Instituto Historica e Geographico Brasileiro*, tomo LXXII, parte 1^a, Rio de Janeiro, 1910.

The former state of Maranhão embraced the present states of Maranhão, Pará, and Amazonas. Therefore, in earlier chronicles and maps, we read: "Brazil e o Estado do Maranhão"; cf., for instance, all maps drawn by the brothers João e Pedro Teixeira. The latter is not to be confounded with the traveler of the same name, who visited Persia.

² Undoubtedly from "deserto," desert.

³ W. Chandless, Notes on the Rivers Arinos, Juruena, and Tapajós, in the *Geographical Journal*, vol. XXXII, London, 1862, p. 268 seq. Karl v. d. Steinen, *Durch Zentral-Brasilien*, Leipzig, 1886.

⁴ "Nambiquas" on the "Second map of Paraguay constructed by the Jesuits of that Province in 1722, presented to the R. P. Michelangelo Tamburini," etc., published

"Nambicua[ra]," as living in the neighborhood of the Xaráye-Aruák Indians, are quoted in the *Relacion Historial de las misiones de los Indios que llaman Chiquitos*¹ by Father Juan Patricio.²

Nambicuára, Indians occupying the same region, were discovered a few years ago by Colonel Rondon³ of the Brazilian army, who, owing to the support of his Paresi-Indian friends, had the good fortune to establish friendly relations with these warlike and wild Indians.

According to Rondon's personal narrative these Nambicuára were entirely unknown to the white settlers of Matto-Grosso.⁴ The first scientific news of Rondon's discovery were communicated by Dr. E. Roquette Pinto, Assistant Curator of Anthropology of the Museu Nacional at Rio de Janeiro, in a pamphlet,⁵ written in Portuguese and in German, presented to the Eighteenth International Congress of Americanists held in 1912 in London.

Roquette Pinto gives a somewhat detailed description of the physical *habitus* of the Nambicuára, of their manners and customs, weapons, home industry, etc., and two short vocabularies of their native language, taken by different persons at two different places in northeastern Matto-Grosso.

by the late Baron de Rio Branco in *Exposição que os Estados Unidos do Brazil apresentam ao Presidente dos Estados Unidos da America como arbitro*, vol. VI, appendice, mappas; New York, 1894, no. 2A. Cf. Martin de Moussy, *Atlas*, and Schuller's edition of Azara's *Geografia Física y Espérica de las Provincias del Paraguay*, etc., Montevideo, 1904.

Further, see: the German edition of the same map, of about 1730; *Third map of Paraguay constructed by the Jesuits*, etc., 1732; Bellin's map in vol. II of the *History of Paraguay*, etc., by Rev. Father Pierre François de Charlevoix, S. J., 1749; and the map of Dr. Juan de la Cruz Cano y Olmedilla, 1775.

¹ The Chiquitos, Jamuco and Chamacoco (of Boggiani and Frič) form a linguistic family distinct from that of the Chaco-Guaycurú, which is composed of the Toba, Mocoví, Abipon, Payaguá, Mbayá, and others.

² Madrid, 1726.

³ A Boróro descendant. The linguistic position of the Boróro Indians of Matto-Grosso is still an open question. Their physical characteristics, manners and customs, etc., however, are akin to the Guaycurú type.

⁴ A series of articles on the same subject published in leading newspapers of Rio Janeiro.

⁵ "Die Indianer Nhambiquára aus Zentral-Brasilien," etc., in *Brasilianische Rundschau*, Rio de Janeiro, s. d. (1912), illustr. (It would perhaps be more correct to say "of Western Brazil.")

The name Nambicuára or Nhambiquára, the origin and meaning of which is not explained by either Rondon or Roquette Pinto,¹ has nothing to do, of course, with the linguistic position of these Indians.

Nambicuára is a Guaraní word and means "long-eared," from *nambí* "ear," and *quára* or *cuára* "hole." Father Antonio Ruiz de Montoya² gives: "*amô-nambiquâ, nāmbiqua-mōñâ*, 'perforating the lobe of the ear'; *nambi-yooá*, 'who has hanging down the ears' (owing to the weight of the wooden or metal ornaments introduced in the perforations of the lobes); *nambiquára*, 'the perforation of the lobe.'"

Thus Nambicuára is a synonym of the nickname "Orejones," "Orelhudos" (long-eared), applied by the Spanish and Portuguese settlers indiscriminately to all Indians who had the custom of wearing large ornaments in the lobes of the ears. "Orejones" or "Long-eared" were even the Inca of Cuzco in Peru. The Orejones near San Francisco de Bejar in northern Mexico are well known to all students acquainted with Mexican ethnography.³ One of the several tribes called Orejones is thought by Professor E. Poeppig⁴ to belong to the Ticuna of the upper Amazon. A short vocabulary of an "Orejones" language was collected by Count Francis de Castelnau⁵ on the upper Amazon. It is undoubtedly closely related to the Huitoto⁶ idiom spoken by several tribes of the Putumayo River.

¹ Roquette Pinto's note, "it is a name of Tupi-guarani origin," in his last article, "Indianer des Nordgebirges," in *Brasilianische Rundschau*, Rio de Janeiro, s. d. (1914), p. 349, is evidently based on my own researches; cf. "Die Bedeutung der Bezeichnung Nambiquára für südamerikanische Indianer," in *Petermann's Mitteilungen*, 58 Jahrg., Gotha, 1912, II, halbband, p. 207.

In the interior of the state of Maranhão in Brazil one who has but one ear is called even now *nambí*; cf. Theodoro Sampaio, *O Tupi na Geographia Nacional*, 2d edit. 1914; São Paulo, p. 22.

² *Tesoro de la Lengua Guaraní*, etc., Madrid, 1639, p. 232.

³ Cf. the Orejon language of the River San Antonio, in Texas; *Manual* of Father Bartolomé García, Mexico, 1760.

⁴ *Reise in Chile und Peru*, bd. II, p. 415.

⁵ *Histoire du Voyage*, tome v, Paris, 1854, p. 294; Martius, *Glossaria*, pp. 297-298; cf. also Dr. Theodor Koch-Grünberg, "Les Indiens Ouitotos," in *Journal de la Société des Américanistes de Paris*, nouv. série, tome III, Paris, 1906.

⁶ The account of the late French traveler Rabouchon has been published by order of the Peruvian Government. See also: "A British-owned Congo," in *Truth*, no. 1,708;

One branch of the Huitoto Indians is named Kaimö by Koch-Grünberg. "Kayme" Indians, in the neighborhood of the Nambicuára, appear also in the map of Paraguay constructed by the Jesuits in 1722, which was mentioned before.

Nambicuára is evidently a collective name, and, therefore, without any value for the linguistic and ethnologic position of the Indians so termed. From the vocabularies which have been published by Roquette Pinto, and from unpublished linguistic material which I have had an opportunity to examine in the National Museum at Rio de Janeiro, I can state that these Indians belong to the great linguistic family called Caribe-aruác.

Dr. Seler,¹ however, asserts that they are a branch of the "Ta-London, Sept. 22, 1909, and cf. n. 1,709, 1,710, and 1,711; *Truth*, Oct. 13 and 27, 1909; Nov. 3 and 10, Jan. 5 and 12, 1910; Feb. 2, April 27, June 1, 15 and 22, July 20, June 7, 1911; July 6 and 20, Oct. 4, April 3 and 17, 1912. Further: "The Indians of the Putumayo, upper Amazon," in *Man*, London, Sept., 1910; Hardenburg's account of his voyage through the wilderness of southern Colombia, London, Fisher & Unwin; *El libro rojo del Putumayo*, etc., Bogotá, 1913, (also translated into English); *Report and Special Report from the committee on Putumayo*, etc. (Blue-Book), London, 1913; *Misiones Católicas del Putumayo, Documentos*, Edición Oficial, Bogotá, 1913.

Count de la Viñaza, *Bibliografía Española de Lenguas Indígenas de América*, Madrid, 1892, no. 1,016, p. 281-II, quotes a "Vocabulario de la lengua de los Indios que pueblan (the original has "poblan"—sic!) los rios de Potumayo y Caqueta, hecho á solicitud del colegio de misiones de San Diego de Quito," a Ms. in small 4to, XII, fme., in the library of the Royal Academy of History at Madrid. This vocabulary, of about 2000 words, was collected by one of the Franciscan missionaries "Anno domini 1751," the date being omitted by La Viñaza, and has been published already (badly) by Mr. Marcos Jiménez de la Espada, in the *Revista de Archivos, Bibliotecas y Museos*, (Tercera época), tomo II, Madrid, 1898, pp. 200-216; 258-263; 427-432; 527-529; 575-577; and tomo III, 1899, pp. 187-191; 358-362; and 518-524. Cf. also Manuel Serrano y Sánz, "Nota al Vocabulario de los Indios del Putumayo y Caquetá," *ibid.*, tomo III, 1899, pp. 601-603.

To the same linguistic family belong also the languages the grammatical structure of which is discussed by an anonymous author in a manuscript, yet unpublished, with the date "Mayo 4 de 1793," preserved in the Lenox Library at New York. The title of the codex is as follows: "Arte de lengua de las Misiones del Rio Napo de la Nacion Quechuehoyos, y idioma general de los mas de ese Rio, Payahuates, Genzehuates, Ancuterres, Encabellados. Juntamente tiene la doctrina Christiana en dicha lengua y en la del Ynga [Quechua]. Al remate." In 12vo., LXXV leaves, clearly written. An extract from this Ms. was published by Dr. Daniel Garrison Brinton, in "Further Notes on the Betoya Dialects; from Unpublished Sources," in *Proceedings of the American Philosophical Society*, vol. XXX, December, 1892, no. 139, pp. 271-278.

¹ Reference concerning in the Proceedings of the Eighteenth Internat. Cong. of Americanists; in *Zeitschrift für Ethnologie*, Berlin, 1912.

púya-Stämme," because they have no hammocks, and "when night came simply lay down in the sand."¹

The proof of my conjecture may be given in several ways. In the first place, the Paresí, Indians of genuine Caribe-aruác origin, call the Nambicuára Uaikokoré and Ouhaniêre, names probably referring to the congenial relations existing between both tribes. The correctness of this assumption seems to be assured by the following comparison:

UAI-KO-KORÊ:

korî, elder sister. Paresí.

wari-korê (female) } son, child. Karayá.²
wari-orê (male) }

kxoru, elder sister. Bakairí.

irt-šôri, brother-cousin. Yaulapiti.

tšo-nôr(i), grandmother (father's mother). Amuěša.³

The Pana-jori and Igi-nôri were sub-tribes of the Gaye "whose language is very similar to that spoken by Iquito."⁴ There is no doubt that the Gaye and Iquito were of Caribe-aruác origin.

OUI-HA-NIERE:

apor-hany, boy. Catoquina.

anere, son. Palmella.

p-anere, husband. Piro.

i-neri, man. Piro.

y-nêrre,⁵ grandfather. Mayna.

Tribes of the same linguistic family often call one another "elder sisters," "younger brothers," "younger boys," "grandfathers," "old women," "aunts," etc., etc., Sipobo, for instance, meaning "elder sisters" of the Pano-aruác branch in eastern Peru; Tamóyo "grandfathers" of the coast Tupí in eastern Brazil, etc.

¹ Th. Roosevelt, "A Hunter-Naturalist in the Brazilian Wilderness," in *Scribner's Magazine*, the sixth article, New York, Sept., 1914, p. 300.

² The Karayá, Iavaše, Trumai, Curuahé, and Chipáya are Caribe-aruác, although some authors think otherwise.

³ See my article, "Yñerre," etc., in *Annaes da Bibliotheca Nacional do Rio de Janeiro*, vol. xxx, Rio de Janeiro, 1912 (Extr. p. 38).

⁴ Father José Chantre y Herrera, *Historia de las Misiones de la Compañía de Jesús en el Marañón Español* (1637-1767), Madrid, 1901, p. 405.

⁵ The Tuyu-ñeri of eastern Bolivia are Pano-aruác; cf. Erland Nordenskiöld, "Beiträge zur Kenntnis einiger Stämme des Río Madre de Dios-Gebietes," in *Ymer*, heft 3, Stockholm, 1905.

"Brother" and "cousin" are synonyms in all Caribe-aruać languages, but are only used when affinity exists. Therefore, it seems to me that those two names applied by the Paresí to their Nambicuára neighbors must have some analogous meaning.

On the other hand, the cultural conditions of the Nambicuára speak undoubtedly against their ethnological relation with the Crên-Crân of central and eastern Brazil. Roquette Pinto and Dr. Seler seem to have forgotten that to the Crên-Crân family belong only tribes of the lowest cultural conditions, such as the Botocudos, Cayapó, Camécân, people still representing conditions of early prehistoric South America. They are generally tall and large bodied men, without well-developed industries, without agriculture, pottery, and boats; they are not swimmers, and in order to pass a river they have to seek its headwaters. The art of weaving is unknown to them. Their huts are very primitive. Some have no permanent dwellings at all and are nomads, sleeping wherever night overtakes them. They have no hammocks and sleep on the ground covered with leaves.¹

Finally, and this is undoubtedly the most important point, the phonology of their language is characterized by *accumulation of sounds entirely heterogeneous*, such as are unknown in the Nambicuára language, as well as in all other Caribe-aruać dialects.

The Nambicuára *ethnographica* preserved in the National Museum at Rio de Janeiro, which I have seen in the Rondon-Roquette Pinto collection, are, unquestionably, the products of a higher civilization than that of the Crên-Crân tribes.

Here I must call attention to the "malaca" or beehive huts of

¹ Following (1) Guido Marlière's account in the *Abelha de Itacolumi*, a weekly paper published in Ouro Preto, Minas Geraes (Brazil), 1824-1825; (2) Dr. W. Kissenberth's personal communications. The example of the Kaingangue alleged by Mr. V. A. Frič can not be accepted because these Indians were influenced by their Guaraní neighbors, while their "brothers" in the state of Rio Grande do Sul (near Nonohay) and in Paraná have no boats and do not swim. The same may be asserted of the so-called Bugres in the state of Santa Catharina, who are still living in the virgin forests between Lages and the German colony of Blumenau, and are termed Xocrên and Docrin. Mr. Frederick Maytzhusen thinks the Guayakí of eastern Paraguay were remains of the Old Guaraní; but this statement is not yet verified. The artistic development of some weapons of the Cayapó Indians, Araguaya River in Goyáz, Brazil, is surely due to the influence of the higher culture of their Caribe-aruać neighbors.

circular form of the Nambicuára.¹ They are identical with those of the Curuahé and Chipaya, visited a few months ago by Dr. E. Suethlage.² And huts of a similar form are also in use among the Arecuna of the Rio Branco in Brazilian Guiana.³

After all, we may say that the physical *habitus* of the Nambicuára, their manners and customs,⁴ their material "Kulturbesitz," and *especially their language*, place them near the Caribe-aruać family.

MEXICO CITY,
MEXICO.

¹ Roosevelt, loc. cit., p. 300.

² Personal communications.

³ See Dr. E. Uhle's communication on his voyage up the Rio Branco; in *Zeitschrift für Ethnologie*, Berlin, 1913.

⁴ I was told by one of Rondon's officers that the Nambicuára were clever swimmers, and that presumably they have "canoas" (boats). Those Nambicuára which Roquette Pinto saw "simply lying down in the soil," were paying a visit to Colonel Rondon and, of course, did not carry with them their hamacas.

BOOK REVIEWS

METHODS AND PRINCIPLES

Zusammenhänge und Konvergenz. FELIX VON LUSCHAN. (Reprint from *Mitteilungen der Anthropologischen Gesellschaft in Wien*, vol. 48.) Vienna: 1918, 117 pp.

The contrasting principles of diffusion and convergence have rarely been so critically balanced and concretely illustrated as in this essay. Von Luschan makes propaganda for neither. He adduces parallels in order to dissect and estimate them. Time and again he comes to the conclusion that in such a feature diffusion is suggested, but remains to be proved, in another convergence is possible. His interest is almost limitless, his knowledge that of the many-sided scholar, his point of view thoroughly historical, his touch sure, swift, and spontaneous. He does not philosophize, but discusses facts. Civilized and primitive cultures are handled on a par. The first twenty pages introduce the problem. The remainder of the paper consists of a consideration of a list of culture elements, alphabetically ordered. Among these are cat's cradles, alphabets, bronze, thunderstones, double eagles, iron work, fans, flood myths, swastika, suspension bridges, initiation ceremonies, pottery, Kwan-yin, solder, mankala, masks, tooth brushes, nephrite, pile dwellings, plow, bark cloth, skull cults, navigation, coiled basketry, proverbs, stilts, constellations, zodiac, totemism, trephining, loom, dice, spear-throwers, queues, composite bows.

"Geniality," in the senses which it has both in English and in the author's mother tongue, best describes the quality of this essay.

A. L. KROEBER

A History of the Art of Writing. WILLIAM A. MASON. New York: Macmillan, 1920, 502 pp.

This book is useful and very pleasant reading. Aim and treatment are much like those of Clodd's *Story of the Alphabet*, but the present work is two or three times as long, has a hundred more illustrations, and the quality of these is of the highest. They are chosen aptly, also with aesthetic feeling. The treatment is generally untechnical, but never to

the point of unscholarliness. The specialist in the history of any system of writing will derive little from the book, yet as a work of general reference it forms a valuable addition to any library. Doubtful points are never forced into a theory; there is no dogmatizing; clearness, balance, and interest pervade the treatment. The work seems thoroughly accurate.

One third of the volume is devoted to picture writing, a third to ideographic and mixed systems, a third to the alphabets, much as in Clodd's booklet. The post-Phoenician alphabets of Asia receive bare mention. A modern book of the scope and quality of Isaac Taylor's still remains a need.

A. L. KROEBER

NORTH AMERICA

Zuñi Breadstuff. FRANK HAMILTON CUSHING. (Indian Notes and Monographs, vol. 8.) New York: Museum of the American Indian, Heye Foundation, 1920, 673 pp.

This republication of the greatest of Cushing's works makes available the series issued in *The Millstone* in 1884-85, and heretofore accessible only in three or four complete copies. Genius and phantast, child and amazing observer, Cushing was at his best when he could subdue his imagination to his eyes and ears; and that he has done here. The book fairly reeks of Zuñi. Take the little conversation on the first page, rendered thus:

Meal, soft corn-flour, and good water equally I mix; then stirring, red-pepper, salt, and suet I put in, into husks I roll this, into an oven all-place shutting the hole; time passed, I take them out. Now then, for eating they are ready.

This is absolutely literal; and the Zuñi text is beyond cavil.

Formal organization of treatment is as wanting as one expects from Cushing; but there is full compensation in the vividness of the narrations, the pregnant anecdotes, the interspersed myths, rituals, and pictures of social life. Possibly there holds of this volume, too, what vitiates so much of Cushing's work as science: that one must himself know the people to distinguish what is Zuñi and what is Cushing. But to the reviewer at least there seems to be no piece of writing that renders so complete and true and powerful an impression of Zuñi as *Breadstuff*.

A. L. KROEBER

AFRICA

Das Alte Ägypten. (*Kulturgeschichtliche Bibliothek*, Herausgegeben von W. Foy. 1. Reihe: *Ethnologische Bibliothek*. Mit Einschluss der Altorientalischen Kulturgeschichte.) A. WIEDERMANN.

In this book the well-known Bonn Egyptologist, Prof. A. Wiedermann, has furnished a brief sketch of 446 pages, in which the outstanding characteristics and rubrics of Egyptian civilization are catalogued and discussed, with notes and outlines. The book offers a very convenient survey of the subject, based for the most part on the available monographs and special treatises with which the author possesses a wide acquaintance. This treatise is intended especially to present the Egyptian people, their land and culture, from the end of the Stone Age to the incoming of the Greeks. The author has wisely chosen to offer only a very brief account of the writing and language of the Egyptians. It is perhaps regrettable, however, that the limits of the work have obliged him to treat both the religion and the art with similar brevity. On the other hand, the customs and usages are more fully presented. The literature is very fully adduced in footnote citations, for there are probably few scholars who have so industriously maintained a complete *zettelkasten* of the current literature in all branches as Professor Wiedermann has done. If the work lacks literary charm and readability, we must nevertheless be the more grateful for the wide range of citation in compact and convenient form which this very industriously compiled survey offers us. It is a book which every technical library of anthropology and culture history will find indispensable.

JAMES H. BREASTED

SOME NEW PUBLICATIONS

Allen, Glover M. Dogs of the American Aborigines (*Bulletin of the Museum of Comparative Zoology at Harvard College*, vol. LXIII, no. 9, 1920, pp. 431-517, 12 pls.).

Czekanowski, Jan. Wissenschaftliche Ergebnisse der Deutschen Zentral-Afrika-Expedition 1907-1908 unter Führung Adolf Friedrichs, Herzogs zu Mecklenburg. Band VI, Forschungen im Nil-Kongo-Zwischengebiet. Erster Teil: Ethnographie, Zwischenseengebiet Mpororo-Ruanda. Leipzig: Klinkhardt and Biermann, 1917. xvi, 412 pp., 2 maps, 4 pls., 186 figs., 14 pp. of music.

Foy, W. Zur Geschichte der Tanzkeulen von den Santa-Cruz-Inseln (*Ethnologica*, 11, Heft 2, Leipzig, 1916, pp. 215-238).

Michelson, Truman. The Owl Sacred Pack of the Fox Indians (*Bulletin 72 Bureau of American Ethnology*). Washington, D. C. 83 pp., 4 pls.

Schmidt, Max. Grundriss der ethnologischen Volkswirtschaftslehre. 2 vols. 1: Die soziale Organization der menschlichen Wirtschaft, 1920. 11: Der soziale Wirtschaftsprozess der Menschheit. Stuttgart: Ferdinand Enke, 1921.

Speiser, F. (Mit Beiträgen von W. Foy.) Völkerkundliches von den Santa-Cruz Inseln (*Ethnologica*, 11, Heft 2, Leipzig, 1916, pp. 153-214).

Thurnwald, Richard. Die Gemeinde der Banaro, Ehe Verwandtschaft und Gesellschaftsbau eines Stammes im Innern von Neu-Guinea; aus den Ergebnissen einer Forschungsreise 1913-1915. Ein Beitrag zur Entstehungsgeschichte von Familie u. Staat. Stuttgart: Ferdinand Enke, 1921. 274 pp.

DISCUSSION AND CORRESPONDENCE

SMOKING AND TOBACCO AMONG THE NORTHERN DÉNÉS

I HAVE followed with the keenest interest the details of the match between the two able wrestlers, Professors Wiener and Dixon, anent the origin of tobacco, and, for a reason of which a word shall be said in due time, the exhaustive paper of the latter on "Words for Tobacco" has especially appealed to me. Of course, I am not competent to judge of the merits or demerits of either thesis, and can only express the conviction of one who has not specialized on the subject that the first of the two contestants has indeed a hard proposition on hand if he really wants to convert people to his way of thinking. A priori, and without an adequate examination, it seems a desperate task to prove the non-American origin of the soothing weed. If I presume to venture just a few lines on that question, the blame must be laid at the doors of Prof. Dixon's treatment of the Déné equivalents for the word "tobacco" and the use of what some may consider that adjunct to modern civilization.

Before I offer any comment thereon, the circumstance of my being a native of France, who has been guilty of some books in the language of his fatherland, will perhaps excuse me for daring to confirm the appositeness of Dixon's strictures on the rendering of a few French terms by his opponent. French *prunes* is plums in English, and English prunes becomes *pruneaux* in French. Prof. Wiener seems to me somewhat disingenuous when he contends that "if necessary, the word *sèches* is added to distinguish the second from the first";¹ wherefrom one would gather that, in his estimation, the case with the French *prunes* is the same as that of the *raisins* of that language. Yet there is no similarity between the two; the French having but one word (*raisins*) to express the English "grapes" and "raisins," have to add a qualificative (*secs*) to differentiate the ones from the others, whilst, in the case of dried plums, they have a special term (*pruneaux*), which they constantly use to the exclusion of any periphrasis.

As to the translation at the bottom of p. 95, it goes without saying that Dixon is quite right. Wiener's assimilation of *épicerie* to "spices" might likewise be open to criticism, because the former is much more comprehensive than the latter, whose real synonym is *épices*.

¹ *American Anthropologist*, vol. 23, no. 1, p. 88.

But what I am chiefly concerned with is Prof. Dixon's nomenclature of Déné terms for the idea of "tobacco" and his deductions as to what they imply. In the first place, let it be distinctly understood that smoking was absolutely unknown to all the Carriers previous to 1792-93, when Alexander Mackenzie passed, almost unperceived, through the territory of the Southern division of their tribe, and the 26th of July, 1806, when representatives of our race, Simon Fraser and companions, first had any intercourse with the bulk of the Upper Carriers farther North. I have already described, on the authority of quasi eye-witnesses, the utter amazement of those people when they first beheld the operation of smoking.

On landing, Fraser's men, to impress the natives with a proper idea of their wonderful resources, fired a volley with their guns, whereupon the whole crowd of Carriers fell prostrate to the ground. To allay their fears and make friends, tobacco was offered them, which, on being tasted, was found too bitter and thrown away. Then, to show its use, the crew lighted their pipes and, at the sight of the smoke issuing from their mouths, the people began to whisper that they must come from the land of the ghosts, since they were still full of the fire wherewith they had been cremated.¹

Were additional proof that smoking and tobacco were originally unknown to the Carrier tribe of the great Déné family necessary, I would submit that, (1) when I first came in contact with those Indians, almost forty years ago, there still lived among them a fairly large number of individuals whose parents were fully grown up when they saw Fraser and his men land on the shores of Lake Stuart; (2) I was personally acquainted with an aborigine who had been born quite a few years before the advent of the whites, though he happened to be elsewhere on the day of their landing at *Tsao'tce*, or the mouth of the Beaver River; and (3) the language of the Carriers decidedly bears them up in their contention.

To this very day, they have no word for pipe other than that for stone. With them *síśé* primarily meant "my stone"; but, in common parlance, it has come to stand for "my pipe," because the first pipes they made were of that material.² Should they wish to be more explicit, they will say *se-ate'ka-tšé*, "my tobacco stone," but in no case have they any term especially descriptive, or even simply denotive, of that particular object which we call a pipe.

As to the verb to smoke, they have formed a synonym by hitting upon the most expressive kind of onomatopoeia possible. Let any one

¹ *Primitive Tribes and Pioneer Traders*, p. 62, of third edition.

² See specimens of these in my "Notes . . . on the Western Dénés," pp. 36-38.

light a pipe, and his tongue and lips will produce a succession of sharp sucking sounds, which cannot be better rendered than by the monosyllable *tæt* pronounced with a lingual explosion (*'tæt*). This the Carriers verbified by prefixing the pronominal crements *as-*, *in-*, *æ-*, etc. (*as'tæt*, I smoke; *in'tæt*, thou smokest; *æ'tæt*, he smokes, etc.), words which have, morphologically, no reference to escaping smoke, but connote the noise produced by the lips of the smoker.

There now remains the Carrier word for tobacco, *æte'ka*—not *teka* as Prof. Dixon has it, and still less *tsabara*, as he also gives it, probably on Petitot's authority. Initial *æ-* of the first term is so essential that it does not disappear with the prefixing of a possessive pronoun, as is usual with most words commencing with that letter. Instead, therefore, of saying *ste'ka*, we will have *se-æte'ka* when we speak of "my tobacco." On the other hand, *æteka* (without the click on the *k*) means "powder horn."

As to *tsabara*, it is a compound with a perfectly Déné complexion, which, however, corresponds to no idea akin to that of tobacco. The reader will grasp its true signification when we analyze it for him: *tsa*, beaver; *ba*, contour, profile; *ra*, hair.

But what of *æte'ka*? Where did that vocable originate, and how did the Carriers of one hundred and fifteen years ago happen to hit upon it in order to designate the new product introduced among them? These are questions which have long puzzled me, and to which I am sorry to say I have not yet found any answer. What I wrote in that connection thirty years ago is just as much to the point today as it was then, and will, for that reason, bear reproduction here.

The word *æte'ka* "must be either a borrowed word or a word formed by agglutination, as the name of the horse (*yezih-li*, 'elk-dog,' or domestic elk). Now I have studied that word in the vocabularies of over twenty tribes, all contiguous, mediately or immediately, without being able to discover anything like an homonymous equivalent. On the other hand, the two parts of which it is composed, *æte-* and *-ka*, are genuine Carrier particles which, taken separately, are not without meaning, but to which no rational signification can be ascribed when joined together. Yet the names of all new objects in the Déné languages are either borrowed from foreign dialects, or more generally formed by compounding, that is by the juxtaposition of two or more names of objects already known. Thus, in *Tsilkoh'tin* the name of tobacco is *tsælyu*¹ which

¹ And not *tsulu*, as Prof. Dixon now has it, p. 27. The Chilcotins say for "I smoke" *tséltécyu*, which seems to correspond to "I make soot medicine," though medicine for bodily ailments is with them *tatapæn*. Yet, within the same class of concepts, they have *nina-Kwoen*, a totally different root, for "eye medicine or water."

means 'smoke [or rather soot] medicine.' Altogether the Carrier (and Tšékéhne) word designating that imported plant has the appearance of an old root of the second category, which is to me inexplicable."¹

Furthermore, the all-important glottal explosion on the last syllable of *ate'ka* absolutely bars the possibility of any analogy between it and the Tlingit *-gan* tentatively suggested by Prof. Dixon. Will not someone propose a better guess?

I have divided the Carrier substantives into four different classes,² which shall be minutely described and conscientiously studied when my Lexicological Grammar, now almost ready for the press, is out. In a former essay³ I also showed how the relative priority of a concept, the approximate sociological age of an object with regard to a tribe, could pretty accurately be surmised by the category to which belongs the word which expresses it. The fourth, which is that of the verbal nouns, is almost exclusively made up of words which are expressive of things, implements, or contrivances of a fairly modern introduction, quite often due to the Caucasian invasion of the Northern wilds. We have already seen by contemporaneous testimony that tobacco and smoking are a comparatively recent importation among the Carriers of the far Northwest. If we are to trust the natural inferences suggested by philology, the chances are that tobacco will prove adventitious amongst the other Northern Dénés as well, even if we take as a gauge the native terms therefor adduced by Prof. Dixon.

Thus, to mention those which have the appearance of being genuine, Loucheux *tse'ted*, Dog-Rib, *tsede'ti*, Hare *tsee'turi* and Chippewayan *t'sæl'tui* are all so many verbal nouns which correspond to "that which one sucks in."⁴ Moreover, I do not recollect having ever heard the act of smoking, let alone the notion of real tobacco, mentioned once in any of the many Déné legends that have been narrated to me, or which I have read in the works of reputable authors.

As to the *na-* element in the Southern Déné words for tobacco, Prof. Dixon attaches to it, I fear, too great importance when he calls it a stem, and possibly misestimates its true import when he suggests that its presence there "might be taken as evidence that the separation of this

¹ Note §, p. 37 of my "Notes . . . on the Western Dénés."

² "The Déné Languages," pp. 181-182, *ap. Trans. Canadian Institute*, vol. 1.

³ "Notes . . . on the Western Dénés," pp. 32-34, *ap. Trans. Can. Inst.*, vol. iv.

⁴ Dixon gives *tseen'tu* for the Montagnais and *ts'El'tui* for the Chippewayan. May I ask what is the difference between the two tribes? (The *tt* of Petitot and other missionaries in the Far North corresponds to my exploded *t*; hence my transcription of Dixon's Déné terms.)

Southern group took place before the use of tobacco was known." ¹ To me that monosyllable would predicate a different, though somewhat analogous, inference, namely that the use of tobacco is older in the South than in the North, and here are my grounds for that opinion.

In their original build, the Déné languages are precise and logical to a nicety. Whenever they render any of those acts which normally consist of many parts or reiterated movements, they generally incorporate in, or prefix to, the words therefor the particle *na-*, which denotes iteration. For instance, the act of sharpening, or grinding, an edge cannot be properly accomplished by a single motion of the hand or application of the stone or file. That motion must, on the contrary, be repeated quite a number of times, or, if you will, a cutting tool has normally to be sharpened from time to time. Hence the verb to express that action in Carrier is *na-s'kas*, which, though meaning morphologically "I sharpen over again," has come to designate the simple act of sharpening. In like manner, you require a number of movements of the arm and hands to wring clothes; the Carrier expression for this will therefore be *na-skræz*, a word which, iterative in its material make up, is none the less simply positive in signification.

In another order of ideas, it is but natural here below to feel cold at times; such an experience is, as a rule, of more or less frequent occurrence. So, to denote that state, you will have recourse to the iterative particle, and say *na-sæstli*, in the same way as you will employ the verb *na-nisthi* when you refer to that common act of sleeping which occurs at least every night.

All of these verbs can be used without the iterative prefix; but then, instead of calling to mind an ordinarily oft-repeated action or state, they will imply that this happens either for the first time, or in such a singular, uncommon, or striking manner that it is singled out for non-iterative expression; in a word, that it must be regarded as unusual. Thus *æ's'kas* and *æ'sræz* ² mean respectively: I sharpen and I wring for the first time; while *sæstli* is perfectly good Carrier for "I undergo an accidental, unexpected, or violent attack of cold," "I take cold," and *nisthi* is the equivalent of "I am sleeping out of my regular hours," "I fell asleep."

Now what is said of iterative *na-* coupled with verbs naturally applies with equal force to the same particle joined to nouns. But to me that is precisely the element which enters into the composition of Navaho and

¹ P. 28.

² The *k* in *na-skræz* is called out by the *n* of *na-*.

Apache *na-'to* and Jicarilla *na-'todi*, which I take to mean literally "that which is over again sucked in." In fact, I feel all the surer of the accuracy of my analysis as I see that the same Navahoes who say *na-ac'to* for "I smoke" reduce the verb to *ec'to* when they intend to point to the act of beginning to smoke.¹

From which I infer that the language connected therewith has, with time, come to conform to the above-mentioned requirements of the Déné grammar, when it is a question of naturally repeated actions, or such as are reckoned of every-day routine, a condition which has not yet been attained in the North, where no related idiom uses the iterative prefix in connection with smoking or tobacco.² In other words, the Dénés of the south have had a longer experience with the soothing weed than those of the north.

I said above that I never heard of smoking or tobacco or saw any mention of them, in any of the legends which I was told by the Indians or read in books. To make this doubly sure, I have just scanned over the late Fr. Petitot's *Traditions indiennes du Canada Nord-Ouest*, a collection of excellently rendered myths which bears me up in my contention. After having given the main body of the Eastern Déné legends without a single reference thereto, the compiler presents us with an account of the advent of the first white people on Great Slave Lake. His informant is none other than the famous half-breed patriarch François Beaulieu, who was an old man at the time of the coming of the pioneer missionaries in the northern valleys.³ The narrator enumerates the gifts bestowed, on that occasion, on the Indian chief by the leader of the newcomers; then he mentions tobacco, whereupon he puts the following words in the mouth of the latter:

"Ah! you naturally don't know it. It is called *tabac*.⁴ Having said so, he gave to every one a pipe and some tobacco, and taught them how to smoke. But as soon as they had smoked: 'Ah! how bad it is!,' they said.

¹ Cf. the Franciscan Fathers' *Vocabulary of the Navaho Language*, *sub voce* to Smoke.

² Dixon gives *tseakh* for the former, a word which well illustrates the helplessness of the scholar who is at the mercy of untrained travellers or writers for his linguistic material. The Nah'ane term for "tobacco" is *t'siK*, and the same aborigines say *Kaa-déstséh* for "I smoke"—no iterative particle in either word.

³ They never spoke of him but as of "old Beaulieu." In fact, he was about 70 years of age when Father (afterwards Archbishop) Taché first met him in 1842.

⁴ Though English-speaking, the first whites in the far north had to use French in their intercourse with the half-breeds and Indians, there being as yet no English half-breeds in the country.

They all set upon spitting, grimacing and whining, and it happened that some even vomitted."¹

From all of which are we to conclude that tobacco is not a native product of America? By no means. Not any more, at least, than we can say the same of maize or the potato, because neither of these was known to the prehistoric Northern Dénés. It was never claimed that Nicotian tobacco originated even within what is now called British America.

A. G. MORICE, O.M.I.

SAINT-BONIFACE, MAN.

¹ Translated from the literal version of Fr. Petitot, pp. 411-12.

BRIEF COMMUNICATIONS

THE ALABAMA ANTHROPOLOGICAL SOCIETY

THE Alabama Anthropological Society, now in its twelfth year, has been active since its organization and has accomplished results hardly hoped for in the beginning.¹

To Dr. Thomas M. Owen, founder and first Director of the Department of Archives and History of the State of Alabama, belongs, in a large measure, the credit for the organization and success of the Society, which grew out of conferences held during the spring of 1909 between him and a few interested parties in the city of Montgomery.

Dr. Owen, when he conceived the idea of the organization of the Department of Archives and History in 1901, had, as one of his dreams, an archaeological survey of the State of Alabama, which later on, through the formation of the Anthropological Society, he was able to initiate. Born at Jonesboro, in Jefferson County, Alabama, December 15, 1866, the son of Dr. William M. Owen and Nancy McAdory (Owen), he was always interested in historical research, but began the practice of law immediately after graduation from the University of Alabama, in 1887, and was in practice from that date until 1901, with the exception of three years, 1890-1893, spent in the Post Office Department, Washington, D. C. While in the latter city he formed the acquaintance of men of his own temperament who in later years were able to assist him in his aspirations. He was one of the founders of the Southern Historical Association, and Secretary of the Alabama Historical Society after its reorganization in 1898, and was connected with all of the historical movements in the Southern States and with many of national scope.

He was not primarily a naturalist or anthropologist, but was interested in both natural history and anthropology. He promoted the organization of the Bartram Natural History Society, as well as of several patriotic societies, and led in the movement to create a number of historical, genealogical, and other kindred associations. The thorough,

¹ A notice of the founding of this Society appeared in the *American Anthropologist* (n. s.), vol. 11, no. 2 (Apr.-June, 1909), p. 325, and reports of its first six meetings in the following number, pp. 491-497.

whole-hearted interest with which he entered into any organization with which he associated himself resulted in his connection with practically every civic and community movement in the city of Montgomery. He married a daughter of Hon. John H. Bankhead, who, on his death, succeeded him as Director of the Department of Archives and History.

With Dr. Owen in the organization of the Alabama Anthropological Society were Professor Henry S. Halbert, long time a student of aboriginal history in the lower South, an authority on the Choctaw language, and a teacher of reputation; Peter A. Brannon, an archaeological student and collector, a pharmaceutical chemist by profession; Dr. Herbert B. Battle, an analytical chemist and President of Battle Laboratory; Edgar C. Horton, a meteorologist; and Buckner Beasley, a hardware merchant. These six men with two others—J. T. Letcher, a lawyer, and J. H. Pater-son, a florist—formed the organization, which now has a membership of 34, being limited by constitutional provision to 36. Up to the present time 67 men have qualified for Active membership, while 52 have been enrolled as Associate members, and the Honorary membership is 10 living and 4 deceased. The Society was organized May 13, 1909, and an anniversary meeting is held on that date every year. Once each month, on the second Monday night, meetings are held in the city of Montgomery, except from March to November, when they take place at outside points of archaeological interest. Active members are required to attend all meetings. By recent resolutions, Non-resident Active members are admitted, but these are not required to participate. To date 132 meetings have been held. One meeting in each year is set aside as the annual outing trip, at which time the entire membership is expected to be present and participate in a two-day session at some point in the State associated with aboriginal history.

The objects of the Society are not strictly archaeological in character or ethnological in character, but are intended to include, in a broad way, everything of an anthropological nature connected with the State's history. While the general subject covers in large measure the history of the Gulf States, no special study of aboriginal life outside of the State is primarily aimed at.

From its organization until March 25, 1920, Dr. Owen remained at the head of the Society, with Dr. H. B. Battle as Vice-President and Peter A. Brannon as Secretary. On the death of Dr. Owen, Mr. Brannon was made President, Dr. Battle continuing as Vice-President at his own request, because he did not feel that he could give the time to the

administrative work of the Society. Mr. Beasley, who from the period of organization until 1915 was Treasurer, was succeeded by Dr. J. P. Bibb; R. B. Burnham succeeded P. A. Brannon as Secretary.

In 1910 the Society issued its first Handbook, which listed the known collectors and collections of Alabama material at that date. Further, there was shown by counties a list of mounds and earthworks so far located. Since then there have been issued a few circulars and papers, and the list of mounds and collectors has been added to materially. In 1920 another Handbook was issued, bringing the list of collectors down to that date, showing by local landmarks, and with a brief description, the location of all known aboriginal sites in Alabama, nearly two hundred in number, and containing much material of a bibliographical nature. It gives a brief résumé of the meetings held from May, 1909, through December, 1920. On July 1, 1920, the Society began the publication of *Arrow Points*, a little mimeographed bulletin, issued monthly to give to the members information and inspiration in their work. The bulletin carries about 20 pages in each issue, consisting of drawings, photographs, and brief biographical sketches, as well as reports on current explorations, the program of the succeeding meeting, and illustrations of recent finds.

The May number, a souvenir issue to commemorate the twelfth anniversary of the Society, carries as a supplement a map of twelve counties, showing the location of the mound and town sites therein, as well as topographical data necessary for the location of them. Another feature is the initial article of a survey of Montgomery County, to show the mound and town sites in that county. Each of the 44 located mounds and some ten or more unnamed town sites will be individually written up and illustrated with photographs. It is proposed to run this as a feature and gradually cover every county in the State. Montgomery, in the center of the State, is known to have been the site of Upper Creek, Alibamo, and Shawnee villages and towns, and the Society has located all of these known historically, as well as having made a complete survey of the entire county. Additional features are the monthly county place-name story and numerous photographs, drawings, and reports. Each month one county of the State is treated by a member of the Society, showing present-day place-names, which have been influenced in some way by aboriginal connection, either by name, association, or suggestion. The nomenclature of the State is rich in aboriginal suggestions and this feature in itself is a rich contribution to the local history of the State.

The Society, so far as the writer is aware, is the only one of its kind in the country. It is not intended to have the work strictly scientific; the historical implications of all our research work are equally held in mind. Popular discussions of local conditions, folk-lore, and traditions are encouraged. It is planned to make a survey of the State in a historical way and in an ethnological way and to cover the ground thoroughly. The Society works actively in coöperation with the Alabama State Department of Archives and History and makes reports to it, and this department has issued its two handbooks, but the monthly bulletin has no connection with the Department. The writer, who conceived the idea of the bulletin, is, however, directly indebted to the Department of Archives and History for much of the material which is used. The individual members are encouraged to do current work in the locating, mapping, sketching, photographing, and surveying of aboriginal points, thereby adding new material to the files of the historical department, as well as posting themselves on local conditions as they exist at the present time.

Since the organization of the Society its members have brought together as a Society collection a very representative group of archaeological objects, now on display in the State Museum, and some six of the members have large individual collections which will eventually be placed therewith. There are in these six collections more than 75,000 objects, and there have been added to the collections of the Alabama State Department of Archives and History more than 50,000 through the Society's work.

PETER A. BRANNON

MONTGOMERY, ALA.

PROCEEDINGS OF THE ANTHROPOLOGICAL SOCIETY OF
WASHINGTON

Meeting of October 26, 1920

THE 548th meeting of the Society was held at the United States National Museum on October 26, 1920, at 4.45 p.m. Dr. Aleš Hrdlička, Curator of Physical Anthropology in the U. S. National Museum, addressed the Society on "The Anthropological Problems of the Far East and the Pacific."¹ The lecture was carefully prepared and dealt with a subject with which Dr. Hrdlička was most familiar, both because of long study and recent field work.

He emphasized first of all the great importance and central position of the study of the anthropology of Asia. There are, indeed, in that field greater problems than any which the American field offers, problems which are connected with the origin of man and of the peoples of Europe. The lecturer divided the problems into two large classes: (1) the more particular problems, and (2) the more comprehensive questions.

The particular problems were arrayed according to ethnic areas. Beginning in the extreme northeast, the speaker described the Chukchee and neighboring peoples, considerable study of which has been made by Russian scientists. The resemblance and relationship of these peoples to the American Eskimos and Indians was clearly discussed. Next in order came the Ainus, Gilyaks, and related peoples of Sakhalin and the Amur region. The Ainus undoubtedly held the whole of Japan at one period; there are some indications that they may have spread into Japan from the north. The relations between the Ainu and other elements which have gone to make up the Japanese people are still far from clear. The anthropology of Japan is one of the most important problems. The Chukchee, Ainus, etc., are now on their decline and there is the greatest need of a thorough and immediate investigation of them from every anthropological standpoint.

The Mongolians were next discussed. Many individuals look almost exactly like American Indians, while others, in the western part of the territory especially, show indications of mixture with white people, ex-

¹ The paper has been published in fuller form in *Science*, issue of December 17, 1920.

hibiting occasionally even blue eyes and white skin. They speak five different dialects, and their songs are strikingly like those of the American Indians. Dr. Hrdlička also pointed out interesting connections between the religious practices of the Mongolians and the Indians, for although the Mongolians have long been converted to a form of Buddhism, they still evidently retain a number of native religious observances.

The problems of China were discussed at some length. Considerable physical and other differences exist between the northern and southern Chinese. These remain to be investigated. The anthropology of Tibet is also still imperfectly known.

When we pass south of China one important group is the Malays. Here we also find one of the most enigmatic of all the existing groups of humanity, namely the Negrito. The Negrito must originally have occupied a much larger area than at present; there are traces of them even in southern China, Burma, and Indo-China. It is probable that before the influx of stronger peoples from the northwest they played an important part in the peopling of Asia. The relationship of the Asiatic Negrito to the African Pigmy is also uncertain, for if there is a relationship it is difficult to explain because of geographical remoteness.

Our knowledge of the Polynesians, Australians, and Melanesians was next briefly reviewed, and the anthropology of India and the adjacent region to the west was then discussed. We see in India a number of diverse elements.

Coming to the comprehensive problems, Dr. Hrdlička first touched upon the peopling of Asia. There is no line of demarcation between the whites and the yellow-browns as there is between the browns and the blacks, while, on the other hand, as the speaker had already pointed out, the Asiatic and American peoples shade into each other. Here is surely a great field for scientific determination.

Perhaps the most comprehensive problem of all is that of the origin of man. In the island of Java have been discovered the remains of a creature that is the closest to man of all non-human forms thus far known. Whether this being was directly ancestral to man or not does not matter; many things indicate that region as a possible site of man's earliest differentiation or his origin. Explorations in that field have thus far barely touched the surface. There are vast promising deposits, and an almost endless number of caves that demand exploration. Of all the fields of anthropological research, here is the most pregnant. And it lies fallow.

Connected with the preceding is the problem of why early man did not populate the mainland of eastern Asia. In all this part of Asia, extending to the Turkestans, there has not been found thus far a single object which would unquestionably point to man's geological antiquity. The objects thus far discovered over these vast regions are of the Neolithic period, and apparently not even the oldest parts of the Neolithic. A large portion of China is covered by a peculiar Quaternary geological formation, the so-called loess. The loess is generally poor in fossils, and geologists incline to the opinion that during the deposit of these accumulations the great region thereby covered was probably not as habitable as it is today; that it did not offer sufficient resources for man or many animals; and that the loess formation may represent conditions such as now exist in the Turkestans or southern Mongolia. But the actual facts are still to be established. All this shows the great need of investigation.

One of the interesting sidelights brought out in the lecture was the curious fact that although China has been densely populated in more recent times, the population did not spill over into the less thickly populated islands to the southeast.

The paper was discussed by Mr. Holmes, Mrs. Zelia Nuttall, Dr. Michelson, and Dr. Swanton.

Meeting of November 16, 1920

At the 549th meeting of the Society, held at the National Museum, at 4.45 p.m., on November 16, 1920, Mr. Sylvanus G. Morley, Associate of the Carnegie Institution of Washington, addressed the Society on "The Hieroglyphic Writing of the Ancient Mayas." Mr. Morley illustrated his presentation with charcoal drawings of the glyphs. After telling of the Maya habitat, travel divisions, and history, and outlining the ethnology of the people, the speaker pointed out that it must be admitted that little progress has been made in deciphering the Maya hieroglyphics, with the exception of those relating to the calendar; but as these comprise nearly half of all the glyphs, we may nevertheless be encouraged by what has been accomplished. Furthermore, very slow progress is being made in the determination of some of the non-calendric glyphs, and the speaker referred especially to an increase in our knowledge of glyphs indicating colors, which have been worked out by Mr. W. E. Gates during the past few months.

The ancient Maya Indians had two systems of numerical notation comparable with the Arabic and Roman systems in use among ourselves. The first of these, which may be compared with our Roman numerals, expresses the numbers by varying combinations of dot and bar. The second, which the speaker termed the Arabic notation of the Mayas, employs a distinctive type of head for each of the numerals from 0 to 13 inclusive. The speaker then discussed and illustrated the various signs employed for the days and years of the Maya calendar. He told of the linking of the Maya chronology with our own and wrote out birth dates of members of the Society in Maya chronology, using Maya symbols.

At the conclusion of Mr. Morley's lecture, Mr. W. E. Gates, of Baltimore, gave an interesting and enthusiastic talk of ten minutes on the subject of Maya writing, and told especially of the recent progress which he has made in the deciphering of color symbols to which Mr. Morley had referred in his talk.

Meeting of December 14, 1920

THE 550th meeting was held in the National Museum, at 4.45 p.m., on December 14, 1920, and had as program an illustrated lecture by Mr. S. D. Bullock, of the Bureau of Plant Industry, Department of Agriculture, entitled "Ten Years Among the Araucanians of Chile." Mr. Bullock has lived for ten years among the Araucanian Indians of the vicinity of Valdivia, Chile, as industrial teacher of the Indians, and knows them and their customs intimately.

The Araucanians, some 50,000 in number, are at present in the best possible shape for study. Many individuals among them everywhere speak Spanish, while the native language is retained, and ancient customs are also retained to a surprising degree. The climate where these people live resembles somewhat that of Puget Sound, and is healthful, although disagreeably windy during part of the year. Houses of the aboriginal type are still to be found. The material culture is quite rich. The Indians, for instance, weave blankets ornamented with beautiful and intricate native designs. Weapons and even household utensils of primitive type are still abundantly to be seen.

Among the lantern slides perhaps the most interesting of all were those showing the fiestas of these Indians and the practices of the medicine women. For the doctors among the Araucanians are women, just as among the Indians of the lower Klamath River in northern California.

At the close of the lecture Mr. Bullock exhibited some Araucanian costumes and other objects. Questions were asked by Lieut. W. E. Safford and others.

Meeting of January 18, 1921

THE 551st meeting was held at the National Museum, at 4.45 p.m., on January 18, 1921. Mr. William E. Myer, of Nashville, Tennessee, gave a lecture on "Recent Explorations in the Cumberland Valley, Tennessee," being an account of archaeological field work done by him in 1920 for the Bureau of American Ethnology. The talk was illustrated by lantern slides.

Mr. Myer described first how he unearthed the ruins of an ancient Indian walled town in Davidson County, Tennessee. This town covered eleven acres and contained traces of the wall embankments and of a town square and the ruins of a temple with its altar, and also earth circles marking the sites of about 125 ancient buildings. These buildings yielded a large amount of pottery fragments, broken animal bones, and other material which throw some light on the domestic pottery, food, and other details of the every-day life of the ancient inhabitants.

He also described the Fewkes Group, in Williamson County, Tennessee. This site had been inhabited at different times by two distinct peoples. The earlier of these was a flexed-burial people; the later was a people who buried the bodies extended full length and lying on their backs. The first or flexed-burial people built the five mounds of this group. Mound No. 2 showed traces of three different stages of erection, and also traces of the buildings erected on each of these stages. One of the most important finds in this mound was the remains of a small sacred chamber which contained traces of a wooden image and an arrangement of stones, probably part of an ancient shrine, and also a quantity of sacred maize and maize meal.

Two fine altars were found in the Fewkes Group.

He also described the great group of mounds on Harpeth River at the mouth of Dog Creek, in Cheatham County, Tennessee. These ruins, which consist of eight great mounds and traces of embankments and cemeteries, extended about two miles and covered portions of two bends in the Harpeth River. The principal mound of this group is the fifth largest mound in the United States.

The lecturer showed photographs of the great ancient Indian fortress discovered by him at the junction of Harpeth and Cumberland Rivers, in Cheatham County, Tennessee. This natural fortress extends three-

quarters of a mile along the summit of a knife-edged, almost perpendicular series of cliffs, on a long, narrow tongue of land between these two rivers. Both the Cumberland River side and the Harpeth River side are almost perpendicular. The summit is only from 200 to 300 feet in width. On this summit are several mounds. He found traces of breastworks commanding the few points scalable by man.

The speaker showed a map of the city of Cisco, discovered by him in Madison County, western Tennessee. This great city had walls about six miles in circumference, covered over 800 acres, and contained 35 mounds, ranging from one foot to 73 feet in height. The main mound was 73 feet high and about 320 feet across the base. This main mound was defended by a series of inner breastworks which formed an inner citadel. The ruins of this city are probably second in extent only to the great mound group of Cahokia.

The lecture was discussed by Dr. Fewkes and others.

Meeting of February 8, 1921

THE 552d meeting was held at the National Museum, at 4.45 p.m., on February 8, 1921. Lieut. W. E. Safford, of the Department of Agriculture, spoke on "Old and New Samoa." The lecture was illustrated by original slides. Lieut. Safford made his first visit to Samoa on the U. S. ship *Mohican* in 1888, before Robert Louis Stevenson came to the islands, and made a second visit in 1899, two years after Stevenson's death.

Mr. Safford stated that

Samoa is the name of the group sometimes called the Navigators' Islands, situated about 4,200 miles southwest of San Francisco. Tutuila, the principal island belonging to the United States, is approximately in latitude 14° 20' south and longitude 170° 40' west of Greenwich. It possesses one of the finest land-locked harbors in the world, Pangopango. The natives are pure Polynesians, belonging to the same race as the Hawaiians, the New Zealanders, Tahitians, Marquesans, and Easter Islanders. They are of fine physique, with regular features, and straight or slightly wavy black hair. The islands are volcanic, with barrier coral reefs surrounding them. Rose Island, at the eastern extremity of the group, is a typical coral atoll.

American Samoa is governed by an officer of the United States Navy, detailed by the Secretary of the Navy. The wisdom of the government in dealing with the natives is shown by its methods of administration. Ancient Samoan customs are followed as closely as possible. The villages choose

their own chiefs from those who have hereditary rights to the position, subject to the governor's approval. The villages are grouped into counties ruled by high chiefs, and the counties are grouped into three great districts, Eastern Tutuila, Western Tutuila, and the District of Manu'a, each of which has at its head a chief appointed by the governor. At the end of each year there is held a general fono or assembly to which all parts of the islands send delegates. In this assembly matters of general interest are discussed, new laws recommended, complaints and suggestions are listened to, laws are explained, and information given regarding all matters affecting the welfare of the natives and the administration. Suffrage is restricted to the heads of families (*matais*) in accordance with Samoan custom, the family and not the individual being considered the unit of society.

There are no public lands in American Samoa. Even the land occupied by the Naval Station was acquired from the native owners by purchase. A few small tracts are owned by foreigners, who acquired their titles before the American occupation.

The islands of Upolu, the home of Robert Louis Stevenson, and Savaii, the scene of recent volcanic activity, were seized by the Germans, who kidnaped woolly-headed Solomon Islanders for laborers on their plantations. They have now come into the possession of the English, and are under the administration of New Zealand.

Views were shown of the vegetation of a sea-beach, with its fringe of coconut palms, forests, village environs, and mountains, including a beautiful crater lake on the island Upolu, called *Lanu-to'o*. These were followed by others illustrating the physical characteristics of the natives, the construction of their houses, their outrigger canoes, and the great double canoes formerly used in warfare, the coconut-trunk bridges spanning the mouths of streams, their arts and handicrafts, including the making of bark-cloth from the inner bark of the paper-mulberry, nets from the fiber of certain nettle-like plants, mats from the leaves of *Pandanus* and *Freycinetia* leaves, war-clubs and spears from various hard woods, carved bowls for holding ava, water-vessels from the shells of coconuts, and various other utensils. Other illustrations showed their games and pastimes including that of sliding down the face of a slippery rock over which a cascade is pouring, sitting dances, and the ceremonial serving of ava, an infusion prepared from the roots of *Piper methysticum*, an aromatic pepper, which has accompanied the Polynesians in their migrations and has been established in all climates which permit it to grow.

Attention was called to the homogeneity of the true Polynesians, as distinguished from the Melanesians and Micronesians, the remarkable

similarity of the myths, traditions, calendar-systems, and tabus of widely separated island groups, the identity of nearly all primitive words in their languages and the resemblance of these to corresponding words of the Proto-Malayans. Examples were given in parallel columns of words illustrating what may be called a Grimm's law of Polynesian dialects and also of the resemblance of certain Polynesian words to corresponding words in the languages of Guam, the Philippine Islands, islands of the Malay Archipelago, Formosa, and Madagascar. Especially interesting are the vernacular names of the principal economic plants of the Polynesians, most of which are identical throughout Polynesia from Hawaii to New Zealand and from New Zealand to Easter Island. All of these plants, with the exception of the sweet potato, may be traced to Malaysia, the cradle of the Polynesian race. The speaker deprecated the erroneous theories repeated in recent years by popular writers, asserting the Polynesians to have been of Caucasian origin. He called attention to the results reached by the Rev. George Pratt, who, after having devoted forty years to the study of the Polynesians and their language, came to the conclusion that the Polynesians must have migrated from Malaysia before the primitive language of the Proto-Malayans had become corrupted by the inundation of Arabic and by the introduction of Sanscrit words from India. Just as the Arabic became softened by Malay influence so, he suggests, the Malay language may have been hardened by Arabic influence, changing such words as primitive *langi* (sky) to the modern Malayan *langit*; the name for fish, called *ika* by the Easter Islanders and *i'a* by the Samoans and Hawaiians, into *ikan*; *ua* (rain) into *ujan*; *ala* (road) into *jalan*; *afi* (fire) into *api*. It is not asserted that the Samoan and the other Polynesian dialects are derived from the modern Malayan; but it is quite certain that these two groups of languages had a common origin, and that the ancestors of the Polynesians were closely allied to those of the inhabitants of the Moluccas and Celebes, whom they resemble in physical appearance and language, as well as in their arts and handicrafts.

The lecturer showed views of landing parties sent ashore to quell disturbances on the island of Upolu in 1899, when Lieutenant Philip Lansdale was killed from ambush and beheaded by the natives belonging to the party of Mataafa, German candidate for the kingship of Samoa. He paid a tribute to Ensign Monaghan, who was the only one to remain with Lansdale when he was shot down, and who died by his side, defending him from the death-knives of the natives. Two days after the engagement the heads of these two friends were recovered from the natives and brought back in

a coffee sack by a Catholic missionary, to be buried with their bodies on the beach beneath the palm trees.

Views of Vailima, the home of Robert Louis Stevenson, were shown, with the roofs and walls riddled by bullet and shell holes, and the yard barricaded with stones; also the "Road of the Grateful Hearts" built through the forest to Vailima, by the chiefs whom Stevenson had rescued from the prison built by the Germans; and finally the tomb of the poet, on the crest of Mount Vaea. Dr. Safford secured two hundred volumes from the Vailima library, including books belonging to Stevenson's father and mother and to the two grandfathers, Robert Stevenson and Lewis Balfour, after whom he was named.

The lecturer spoke throughout from first-hand information. At the close of the lecture there was a discussion by Dr. Hough, Mr. Holmes, and others.

Lecture of March 21, 1921

At the 553d meeting, held at the National Museum, at 4:45 p.m., March 21, 1921, Dr. J. Walter Fewkes, Chief of the Bureau of American Ethnology, spoke on "The Fire Temple of the Cliff Dwellers." The ruin of the Fire Temple was excavated by him on the Mesa Verde National Park, Colorado, during the summer of 1920. The lecture was beautifully illustrated by slides.

Dr. Fewkes stated that it had long been surmised that the cliff dwellers had an elaborate fire cult, but it was only during the past summer that he was able to demonstrate that fact by discovering a building which he believed was especially dedicated to fire rites and the conservation of the eternal fire. To this cliff-house, which is situated in Fewkes Canyon not far from Sun Temple, he has given the name "Fire Temple," views of which were shown on the screen.

The creation of fire by artificial means, said the speaker, was the oldest and greatest invention man ever made, and its influence on the development of human culture was most profound. Fire is not only the mother of all the arts, but also a most important factor in the sociological and religious development of primitive culture. Destitute of fire, man would be little above a brute. The possession of fire enables him to live in climates otherwise prohibitive, to cook his food, and to smelt his metals. Some authors assert that the earliest habitations of man were constructed to protect his fire. No race of man is ignorant of fire, and there are no animals known with sufficient intelligence to kindle or replenish it. In such esteem must the inventor of fire have been held by

his contemporaries that he might well have been deified by them and looked upon as a supernatural being, possessed of magic power beyond their comprehension.

The ruin identified as Fire Temple is altogether exceptional in form: it consists of a court fifty feet long, with walls plastered and decorated with symbols, and flanked at either end by massive walled rooms. It has a large circular fireplace in the center built of stone. This fire hole was buried four feet below the surface when exploration began, but the removal of the accumulated earth revealed a fine floor. Around this court extends a stone bench forming a seat upon which the spectators no doubt sat during fire dances.

The wall of one of the rooms of the eastern building was finely plastered and bore painted figures that formerly gave the name of "Painted House" to the ruin. These paintings are those associated with fire ceremonies, and one of them represents the fire god who is still personated at the fire dance among the Hopi Indians. Other figures representing fire, mountain sheep, and priests playing on flutes also occur. Dr. Fewkes believes that this is the room where the new fire was annually kindled with great ceremony by artificial methods, and that after it had been ignited in secret it was carried to the court, when fuel which had been previously placed in the fireplace was ignited until it blazed to the roof of the cave. Around this fire ceremonial public dances were performed, similar to those which are at present celebrated among the Hopi or Navaho.

The symbolism on the walls of this building shows that fire making was connected with the production of life, and that the ancient cliff dwellers of the Mesa Verde regarded fire and life as synonymous, the creation of fire being analogous to the creation of life, a primitive conception which was discussed at some length by the speaker. The Fire Temple was regarded not only as the place where fire was created with ceremony, but also the building where an eternal fire was conserved from one year to another.

The lecturer then considered the various aspects of fire worship among other tribes of Indians, especially the Pueblos, and pointed out the many similarities in symbolism between the objects found and those used by the Hopi in their fire ceremony at the present day. He said Fire Temple on the Mesa Verde was the only aboriginal building in the Southwest especially devoted to the fire cult, and closed by pointing out

resemblances between Sun Temple and Fire Temple, which he ascribed to the intimate relationship of fire and sun worship in early times.

The lecture was discussed by Dr. Hough, Mr. Holmes, and others.

Meeting of March 22, 1921

THE program of the 554th meeting, held at the National Museum, at 4.45 p.m., March 22, 1921, was a paper by Mr. G. N. Collins, of the Department of Agriculture, on "The Origin and Early Distribution of Maize."

Mr. Collins stated that

it was necessary at the very beginning to dispel any impression that may have been created by the title of the lecture to the effect that the origin of maize has been discovered. The subject has been studied exhaustively from many angles but without positive results and the chief hope now lies with the archaeologists, who, it is hoped, will some day unearth the evidence that will replace conjecture with knowledge.

The plant itself, however, has settled one point regarding its domestication, viz., that maize is of American origin.

Although for many years disputed, this statement may now be made with assurance. So long as the argument was confined to archaeological and philological fields there was room for reasonable doubt, although the disputants seldom admitted as much, but with the recognition of the close relationship between maize and the native American grass *Euchlaena* or teosinte, together with the complete absence of maize relatives from the Old World, the contention for an Old World origin became untenable.

Although of American origin, there are some reasons for believing that maize may have reached Asia before the time of Columbus. At one time the balance of evidence was in favor of this view, but a rather extensive examination of the pre-Columbian Chinese literature, made by Mr. W. T. Swingle, failed to disclose any certain reference to maize. This, together with the evidence presented by Dr. Laufer, leaves the burden of evidence in favor of its post-Columbian introduction. The question should still be left open but in any case the introduction of maize into the Old World must have been long after its domestication and is therefore outside of the present discussion.

Before attempting to locate the place of origin more closely it will be well to consider the different theories that are held regarding the manner of its origin or domestication.

Viewed in relation to natural wild species, maize is a monstrosity. In any of its known forms it is quite incapable of maintaining itself without the aid of man. This fact alone dispels practically all hope of discovering the wild prototype of maize. To be wild this plant would have to be very unlike maize.

Instead of possessing adaptations for distributing the seed, the seeds are indehiscent on a closely packed spike and are further protected against dispersion by being surrounded by a series of long bracts or husks. The young plants are unable to compete with other vegetation. Neither is maize particularly resistant to drought, alkali, cold, or excessive moisture. All of the other cereals under favorable conditions may escape from cultivation and persist for a time unaided but there are no records of escaped maize. These facts must be kept in mind in attempting to trace the domestication of maize.

Three general theories of the domestication of maize have been advanced. Briefly stated, these are as follows:

1. The cultivated forms of maize descended from pod corn or *Zea tunicata*, which, it has been claimed, is a wild plant in Paraguay.
2. Maize has been derived by gradual evolution from some plant related to teosinte (*Euchlaena mexicana*), a native Mexican grass.
3. Maize is the result of a hybrid between teosinte and some other species of grass.

To these might be added a fourth theory which, so far as I know, has never been advocated by any one but which is worthy of consideration, viz., that maize originated as a mutation or sport from teosinte or some ancestor of teosinte.

The early accounts of maize abound in references to pod corn as a wild or primitive type of maize. The distinguishing feature of podded maize is that in addition to husks which cover the ear, each individual grain is completely enclosed by the glumes. Pod corn was first reported by August de Saint Hilaire in a letter addressed to the President of the French Academy of Sciences and published in 1829. The specimen presented by Saint Hilaire consisted of a part of an ear received by him from the Abbé Larranhaga of Montevideo. It was accompanied by the statement from the Abbé that this variety was cultivated by the Guaycuru Indians. This statement of Larranhaga's was questioned by Saint Hilaire, who claimed that the Guaycurus were a wild, non-agricultural tribe.

The podded ear was shown to a young Guarani Indian of Paraguay who had accompanied Saint Hilaire to France. This Indian recognized the specimen as from his country and said that it grew in the humid forests. Without apparent warrant the word "wild" has crept into this quotation until there are now many statements to the effect that maize, especially podded maize, has been growing wild in Paraguay.

There can be little doubt that pod corn is recognized as a variety in Paraguay but there is no reason for believing that it exists as a wild plant there or anywhere else. Pod corn as we know it would be quite incapable of maintaining itself without cultivation. Furthermore, pod corn is known

to have arisen more than once by mutation from non-podded varieties. The long glumes of pod corn are distinctly ancestral in character, nearly all grasses having the seeds enclosed in glumes after the manner of pod corn.

Although pod corn may not be considered as an ancestor of maize, the fact that it exhibits ancestral characters makes it a matter of great interest to know more of the part which it plays in the agriculture of the Indians of Paraguay.

In discussing the other theories of the origin of maize it will be necessary to make frequent reference to teosinte, the closest wild relative of maize. This plant is a tall grass unknown in the wild state outside of Mexico. It has much the general appearance of maize. The chief difference in habit is that instead of having a single stalk or a strong central stalk surrounded by a few slender branches or suckers the teosinte plant commonly produces numerous stalks of the same size. The tassel or staminate inflorescence is also more profusely branched and lacks the characteristic central spike of maize. There are many other minor differences but after all teosinte is much like maize except in its pistillate inflorescence or the part corresponding to the ear of maize. Instead of the thick ear bearing many rows of named seeds, the seeds of teosinte are borne on a much branched inflorescence, the individual seeds being loosely attached to one another like strings of triangular beads. The individual seeds instead of being naked are deeply imbedded in segments of the rachis which fall apart, each segment with its enclosed seed. In spite of these profound differences maize and teosinte hybridize freely.

The many resemblances between maize and teosinte, together with the fact that the two forms interbreed with perfect freedom, make it certain that whatever the origin of maize it must be intimately associated with teosinte or some near relative of that plant. Very little is known regarding the part played by teosinte in the economy of the natives of Mexico. It is planted by the pioneers of Mexico as a fodder plant but there is nothing to show that it has ever been used as human food. Here again I hope we may look to anthropologists for further information regarding the rôle of teosinte in the economic life of the aborigines of Mexico.

The idea that maize originated from some extinct ancestor of teosinte as a result of selection operating on small variations, while more plausible than the pod-corn hypothesis, seems very unlikely.

The theory of a hybrid origin seems to reconcile the evidence that maize is undoubtedly closely related to teosinte with equally clear evidence that many of the characters and tendencies of maize are entirely foreign to teosinte or the group of grasses to which it belongs. To argue this point would lead to detailed discussion of the morphology and genetics of the plants concerned, in which probably the auditors would not be interested.

From studies of the comparative morphology of maize and teosinte and hybrids between these two species, it is believed that this unknown ancestor of maize must have belonged to the *Andropogoneae*, a tribe closely related to *Maydeae*, in which maize and teosinte are placed. From the standpoint of human utilization this plant must have differed from teosinte in having naked or nearly naked seeds, borne on a rigid rachis. I am still hopeful that remains of this ancient food plant will be brought to light as a result of ethnological investigations.

The speaker stated that before an audience of anthropologists he felt some hesitation in stating his belief that in maize the New World has given man the oldest cereal. His hearers might think this just another instance of an enthusiast claiming great antiquity for his speciality. He said it would have to be admitted that definite proof of the claim can not be produced, but before dismissing it as altogether absurd he wished to recall to the attention of his audience some of the features that distinguish maize from the other cereals: (1) Maize is the only cereal so profoundly modified that its wild prototype is unknown; (2) maize is the only cereal completely dependent on man for existence; (3) maize is the only cereal known in a fossilized condition; (4) no other cereal compares with maize in the great diversity of its forms.

In summing up, the chief points which Mr. Collins wished to emphasize were:

That maize was domesticated in America, probably in Mexico.

That of the various theories proposed the one that best accommodates the facts is that maize arose as a hybrid between teosinte and an unknown plant with edible seeds.

That maize must have originated in a region where teosinte existed as a wild plant.

That maize has become differentiated to a very remarkable extent, a differentiation much greater than that of any other cereal.

That this differentiation took place before the earliest prehistoric records.

That the distribution of types existing at the time of the discovery of America was the same as that indicated by the earliest fossil and archaeological remains.

Thus Mr. Collins agrees on the whole with Harshberger, who advocated the theory that maize has been hybridized with some other close relative, but puts the relationship a little further off—for genetic reasons.

The paper was discussed by Dr. Hough, Prof. Hitchcock, Lieut. Safford, Mr. La Flesche, and others.

Meeting of April 5, 1921

THE 555th meeting of the Society was held in conjunction with the Medical Society of the District of Columbia, at the new home of the latter, at 1718 M Street, N.W., on April 5, 1921, at 8 p.m. Dr. George M. Kober presented as his address as the retiring president of the Anthropological Society of Washington for 1920 a paper entitled "A Plea for the Prevention of Permanent Disabilities in Childhood." In pursuance of the established custom of the Society, there was no discussion.

Dr. Kober stated that in his sociological studies of physically defective persons who contribute such a large contingent to our charitable and correctional institutions he became convinced, over twenty years ago, that many of those partial and complete disabilities could have been prevented by proper care and treatment in childhood. In order to determine the number of physically defective children in the graded public schools of the city of Washington, upon his request as Chairman of the Committee on Social Betterment of President Roosevelt's Homes Commission, the health officer and Board of Education authorized a general medical survey of the pupils. The examination was conducted by the medical inspectors of the schools under the immediate supervision of Dr. H. C. Macatee, Assistant Secretary of the Commission. The results were tabulated and it was found that out of the 43,005 pupils, 13,407 were colored and 29,598 were white. Among the colored children 3,784 instances of the defects listed in the table were encountered, or a relation of 28.2 per cent. Among the white pupils 11,520 notations of defects, a relation of 38.9 per cent. out of the whole, were encountered. The difference in percentage of defects between white and colored children was found to be solely due to a better condition of the teeth in the colored children. The total defects noted were 15,304, or 35.3 per cent. of the pupils examined. Of this number:

6,698	or	15.57	per cent.	had defective teeth
2,176	or	5.05	per cent.	had defective vision
2,062	or	4.79	per cent.	were mouth breathers
934	or	2.17	per cent.	were anemic
835	or	1.84	per cent.	had defective hearing
727	or	1.69	per cent.	were ill nourished
461	or	1.07	per cent.	had strabismus (squint)
312	or	0.72	per cent.	had discharging ears
272	or	0.63	per cent.	were deformed

It was not deemed best to conduct physical examinations involving the removal of clothing, and hence the number of ruptured children and those having cardiac and respiratory defects could not be determined, but judging from the records of the Board of Charities and of hospitals the number is sufficiently great for serious consideration. The speaker pointed out that as a member of the Board of Charities he had recommended that the physicians to the poor, instructive visiting nurses, and agents of the Associated Charities be requested to encourage the parents of poor children to authorize operative procedures or hospital treatment for the prevention of permanent disabilities, and presented statistics to show that the results have more than justified a general acceptance of these principles.

It will be readily conceded that every crippled, deformed, or physically defective child should, if possible, be spared permanent disability, and no thoughtful parent should hesitate to act when attention is directed to the serious consequences of neglect. Poverty is no excuse for "the do nothing system," as the medical charities offer adequate facilities for persons unable to pay for the same.

The speaker then proceeded:

One of the beneficial results of the world war as well expressed by Surgeon General Ireland, "was a determination by examination of the actual physical condition of the adult male population of military age, and a consequent awakening of the nation to the necessity for efforts directed toward limiting the possibility for the continued evolution of physically defective citizens."

The examination of the registrants before December 15, 1917, resulted in the rejection of 29 per cent. This was before the industrial and economic classification of all registrants had been made. After this classification had been accomplished 14.5 per cent. were rejected by the local boards, and approximately 7 per cent. were rejected by the boards at military camps. This gives a total rejection of 21.5 per cent. Forty-seven per cent. of the men examined were found to have certain defects. Fifty-three per cent. were accepted as fully meeting the physical standard, with no defects recorded.

The percentage of rejections varied from 14.13 in South Dakota to 46.67 in Pennsylvania. The percentage of a large group of city boys was 21.68 compared with 16.89 per cent. in country boys. A comparison of Americans and persons of foreign birth shows that the rate of rejection for the American born was 13.64 per cent. and for the foreign born 17.14 per cent.

In the light of the foregoing facts, especially the results of the stock-

taking of American manhood as recorded by the draft board statistics, it is apparent that much can and should be done for the prevention of permanent disabilities in childhood. Indeed no system of education can be considered complete that does not provide for the promotion of physical education, including medical inspections and the correction of all remediable physical defects. Children are the most valuable asset of the nation, and every effort which makes for better health, a temperate, untainted, and virile race, will be the best safeguard in the prevention of disease, and greatly promote the efficiency and happiness of present and future generations.

In conclusion, the speaker also advocated military training between the ages of 18 and 20, because of its physical, hygienic, and moral benefits. During this period all physical defects of a remedial character should receive proper treatment.

Meeting of April 19, 1921

THE 556th regular meeting (42d annual meeting) of the Society was held at the National Museum, at 4.45 p.m., April 19, 1921. Dr. C. Hart Merriam, President of the Society, delivered a lecture on "The Indians of the Yosemite Region, California."

After tracing the history of this disappearing group of Indians, which belongs to the Mewan stock, the speaker told of their place names, the construction of their villages, their arts and food preparation, their interesting social division into a land and water phratry which he discovered a number of years ago, their mythology and beliefs, and their medicine-men.

The lecture was illustrated by a large number of slides showing the distribution of the dialects of the stock, the history of the Indians, the landmarks of the region, and the present survivors.

At the close of the lecture the annual meeting of the Society was held. The President called for the report of the Secretary, which follows:

SECRETARY'S REPORT

The Society has at present 51 active members, 6 life members, 4 associate members, 31 corresponding members, and 22 honorary members, making a total membership of 114.

Four new members have been added during the year: Mr. W. E. Myer, Mr. M. J. Caples, Mr. R. E. Montgomery, and Miss Ellen Hayes.

We regret the loss through death of one active member, Dr. Edwin Lee Morgan.

The customary number of meetings were held and the following lectures presented:

Aleš Hrdlička, *The Anthropological Problems of the Far East and the Pacific*.

Sylvanus G. Morley, *The Hieroglyphic Writing of the Ancient Mayas*.

S. D. Bullock, *Ten Years Among the Araucanians of Chile*.

William E. Myer, *Recent Explorations in the Cumberland Valley, Tennessee*.

W. E. Safford, *Old and New Samoa*.

J. Walter Fewkes, *The Fire Temple of the Cliff Dwellers*.

G. N. Collins, *The Origin and Early Distribution of Maize*.

George M. Kober, *A Plan for the Prevention of Permanent Disabilities in Childhood*.

C. Hart Merriam, *The Indians of the Yosemite Region, California*.

Respectfully submitted,

JOHN P. HARRINGTON,
Secretary

The Secretary's report was accepted as read. The President then called on the Treasurer for his report, which is as follows:

TREASURER'S REPORT

The following is a summary report of the transactions of the Treasurer's office for the year ending this day:

Cash balance on hand April 28th, 1920, the date of the last report of your Treasurer\$108.77

Receipts

Membership dues for 1919	\$ 10.00	
" " " 1920	31.00	
" " " 1921	170.00	
Dividends on Stock of Sanitary Housing Improve- ment Company	20.50	
Interest on Bank Deposits	1.53	233.03
		<hr/>
Total receipts		\$341.80

Disbursements

September 14, 1920,	
To J. S. Goldsmith for extra attendance at the Society's meetings	\$ 4.50
December 9, 1920,	
To J. S. Goldsmith for one extra attendant at Society meeting and electrician	5.00
December 11, 1920,	
To The Am. Anthropological Association for the <i>American Anthropologist</i> served to Active Members	147.25
December 14, 1920,	
To J. C. Proctor, for printing notice cards for Society's meetings	5.00
February 25, 1921,	
To J. S. Goldsmith for the services of extra attendant and an electrician at the Society's meetings as per bill	13.50
March 26, 1921,	
To J. C. Proctor for printing notice cards for the Society's meetings	5.00
March 31, 1921,	
To J. P. Harrington, the Secretary, for reimbursement of expenses	16.24
April 15, 1921,	
To J. C. Proctor for printing notice cards for Society's meetings	4.25
April 16, 1921,	
To J. P. Harrington, the Secretary, for reimbursement of expenses	1.50
Total disbursements	\$202.24
Balance this day in Bank	\$139.56

ASSETS OF THE SOCIETY

Current Account

Cash balance on hand this day on deposit in the bank of the Washington Loan and Trust Company	\$139.56
Estimated value of unpaid dues collectable during the present fiscal year	45.00
Reimbursement of the Washington Academy of Sciences of one-half the expenses of a joint meeting with this Society	10.50

Investment Account

Stock of the Washington Sanitary Improvement Company (No. 505), 21 shares, par value \$10.00, cost	210.00
Stock of the Washington Sanitary Housing Company (No. 222), 2 shares, par value \$100.00 each, cost	200.00
One Coupon Bond E03217835 Second Liberty Loan Converted four and one-quarter Gold Bond of 1927-1942, which was received in exchange for No. 3598893 for fifty dollars, of the United States, Second Liberty Loan, bearing four per cent. interest, which had been purchased by direction of the Board of Managers out of the Life Membership Fund, then aggregating \$51.98	50.00
The interest of two dollars on the first bond will be added to the Life Membership Fund which now is \$4.41, making a total of ...	6.41
Total assets	\$667.47

There are several outstanding bills amounting to about \$44.00 which will reduce the cash balance of \$139.56 by that amount. These will be paid on approval by the Board of Managers.

Respectfully submitted,

J. N. B. HEWITT,
Treasurer

Approved:

F. NEUMANN,
J. WALTER FEWKES,
FRANCIS LA FLESCHIE,
Auditing Committee

The Treasurer's report was accepted as read.

The Society reelected the following officers for the ensuing year:

President, Dr. C. Hart Merriam.

Vice-President, Mr. Neil M. Judd.

Secretary, Mr. John P. Harrington.

Treasurer, Mr. J. N. B. Hewitt.

Board of Managers, Dr. Charles L. G. Anderson, Mr. Felix Neumann, Mr. Francis La Fleschie.

JOHN P. HARRINGTON,
Secretary

PROCEEDINGS OF THE AMERICAN ETHNOLOGICAL SOCIETY

Meeting of October 27, 1919

THE American Ethnological Society, Inc., met jointly with the Section of Anthropology and Psychology of the New York Academy of Sciences at the American Museum of Natural History. Dr. Clark Wissler called the meeting to order at 8.30 p.m. The following members were present: Donohugh, Goddard, Gunther, Hagar, Hodge, Lowie, Nelson, Schleiter, Sullivan, Wissler. There was a fair number of visitors, among them Professor and Mrs. Alexander Zelenko, of Moscow, and Dr. Ralph W. Tower. Miss Erna C. Gunther, of 198 De Kalb Avenue, Brooklyn, who had been nominated by the Board of Directors, was unanimously elected a Fellow of the Society.

Dr. Clark Wissler spoke on "Recent Explorations in the Southwest," with special reference to the Aztec ruin in New Mexico, which has been explored for several years by Mr. Earl H. Morris. The lecturer enlarged especially on the chronological aspect of the problem, more particularly mentioning Professor Douglas's studies on trees used in house construction as a guide to the determination of time periods. The paper was discussed by Mr. F. W. Hodge and Dr. P. E. Goddard, while Mr. Louis R. Sullivan contributed some remarks on the physical type of the Basket-makers.

Since Dr. A. A. Goldenweiser, who was to have spoken on "Scientific Method in History," was prevented by illness from presenting his paper, the floor was thrown open for the ventilation of matters of anthropological interest and a number of brief communications were elicited. Dr. Lowie called the attention of members to the recent founding of a Belgian School of Anthropology in Liege, and Drs. Schleiter, Goddard, and Wissler discussed the services that might be rendered by anthropology in the solution of present-day problems.

Meeting of November 24, 1919

THE Society met at the American Museum of Natural History, with President Clark Wissler in the chair. Members present: Boas, Dono-

hugh, Goddard, Goldenweiser, Lowie, Mead, Ogburn, Parsons, Roberts, Schleiter, Spier, Sullivan, Wissler.

There was a brief business meeting. On behalf of the Board of Directors the Secretary presented the name of Professor Wm. F. Ogburn for fellowship in the Society, and he was unanimously elected. Then followed the program of the evening.

Dr. A. A. Goldenweiser spoke on "The Problem of Origins." He drew a distinction between the older "classical" point of view, according to which culture progressed along a definite path, and the modern conception of merely partial parallelism, with an indefinite number of intercrossings, convergent and again divergent developments. With the earlier school the original condition of an institution or other phenomenon naturally loomed as tremendously important, for it furnished the explanation of observed phenomena. From the present point of view the origin does not play the same part, merely satisfying a speculative longing to conceive the past without in any way illuminating the present. Nevertheless the tendency to gratify this craving must be recognized as justifiable, and the speaker instanced Professor Boas's and his own explanations of totemism and Dr. Lowie's theory of the sib as examples.

The paper was discussed by Drs. Lowie and Schleiter and Professor Boas. Dr. Lowie pointed out that the reason for seeking origins often arose in the attempt to account for similarities in distinct areas; also that in some cases the chronological factor enters; one condition is established as earlier, and the theorist then essays to derive from it the later phenomenon. Dr. Goldenweiser accepted these points as supplementary to his own. Dr. Schleiter emphasized the necessity of care in classifying the phenomena whose origin we are seeking. Professor Boas pointed out that in comparing the doctrines of unilinear evolutionists to those of biologists we are not quite fair to the biologists, since they do not postulate a single line of evolution without any divergence; what the cultural theorists of the earlier period did was to stress the orthogenetic character of cultural evolution.

Mr. Louis R. Sullivan then presented his "Notes on the Negrito Problem." He gave the distribution of pygmy races, showed tables giving their measurements, and demonstrated three Andamanese, one Bushman, and one Philippine Negrito skull. He inclined to the view that the pygmies do not form a single race, but so many local variants. In answer to a question by Dr. Lowie, he expressed himself as favoring the view of a connection between Hottentot and Bushman. Professor Boas

asked for the speaker's opinion on Kollman's theory. Mr. Sullivan said he did not believe in the occurrence of a pygmy-like prehistoric people in Europe, nor could he accept the theory that man's ancestors were of excessively low stature.

Meeting of January 26, 1920

Annual Meeting

THE annual meeting was called to order at 8.30 in the Academy room. In the absence of President Wissler, Dr. Boas took the chair. Present: Boas, Goddard, Gunther, Lowie, Ogburn, Parsons, Reichard, Roberts, Schleiter, Spier, Weitzner.

The Secretary presented the following report, which was adopted as read:

SECRETARY'S REPORT

The present membership of the American Ethnological Society, Inc., is as follows:

Life Members	13
Members	14
Fellows	84
	—
Total	111

The number of Life Members has remained stationary, as has that of Members; that of Fellows has been decreased by one; that of the one-time Anthropological Fellows now reckoned as Fellows (18) by three. The total loss throughout the year has thus been four. This is partly due to resignations, partly to a more rigid sifting of non-paying Members in making this year's count. The census is of necessity somewhat tentative. The Secretary has retained the names of Members such as Mr. Jochelson, who has been beyond the reach of communication, and of all those Members who, in his opinion, are likely to meet their obligations to the Society. The Secretary regrets to announce the death of Dr. A. Jacobi, for many years a member of our organization. The Subscribers dealing directly with the Society number ten, the remainder deriving our publications through C. E. Stechert & Co.

The usual number of meetings were held during the year, the following titles being presented:

(January) Franz Boas, *Social Organization of the Kwakiutl*.

(February) Alanson Skinner, *Archaeological Explorations within the Limits of New York City*; H. J. Spinden, *The Indians of Eastern Nicaragua*.

- (March) N. C. Nelson, *Exploration in the Southwest of the United States*.
 (May) P. E. Goddard, *Observations on Apache Religion*; R. H. Lowie,
Medicine Bundles of the Hidatsa Indians.
 (October) Clark Wissler, *Recent Explorations in the Southwest*.
 (November) A. A. Goldenweiser, *The Problem of Origins*; L. R. Sullivan,
Notes on the Negrito Problem.

An account of the Proceedings from November, 1918, until May, 1919, inclusive, is to appear in the October-December issue of the *American Anthropologist* for 1919.

Respectfully submitted,

ROBERT H. LOWIE,

Secretary

The Secretary next presented the Treasurer's Report, duly audited by a committee previously appointed by the President, and the Report was adopted as read.

ANNUAL REPORT OF THE TREASURER OF THE AMERICAN ETHNOLOGICAL SOCIETY

January 1, 1920

Receipts

Balance on hand Jan. 1, 1920, Guaranty Trust Company	\$ 680.75
Balance on hand Jan. 1, 1919, Manhattan Savings Institution	2,564.97
Interest from Guaranty Trust Co.	17.23
Interest from Manhattan Savings Inst.	94.31
Dues from members	462.12
Dr. Lowie for "Ojibwa Texts" and payment for old publications	6.50
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	\$3,825.86

Disbursements

Printing, secretarial expenses, and postage	\$ 13.50
American Anthropological Association	
for 86 memberships	86.00
for publications	307.67
American Museum of Natural History	
for attendants	10.00
Guaranty Trust Co., bank exchanges84
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	418.01
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	\$3,407.85

Total Assets, January 1, 1920

On deposit in Manhattan Savings Institution	\$2,650.28	
On deposit in Guaranty Trust Co.	748.57	\$3,407.85
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Respectfully submitted,

ELSIE CLEWS PARSONS,

Treasurer

Correct, January 21, 1920:

BELLA WEITZNER,

LOUIS R. SULLIVAN,

Auditing Committee

The following budget, based on a calculated probable income of \$949.68, was presented by the Board of Directors and accepted by the Society:

For membership dues in the A. A. A.	\$ 90.00
For the American Anthropologist	360.00
For secretarial expenses and attendants at meetings	25.00
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Total	\$475.00

On behalf of the Board of Directors the Secretary presented the following for election to fellowship: Miss Gladys A. Reichard, Fernald Hall, Columbia University, N. Y. C. Miss Reichard was unanimously elected.

As a nominating committee the Board next presented the following slate for the year 1920:

President, Robert H. Lowie.

First Vice-President, F. W. Hodge.

Second Vice-President, Clark Wissler.

Secretary, N. C. Nelson.

Treasurer, E. C. Parsons.

Editor, F. Boas.

Board of Directors (in addition to the above), P. E. Goddard, A. A. Goldenweiser, T. Mayer.

There were no additional nominations and the Secretary was instructed to cast a single ballot for the nominees.

Dr. P. E. Goddard was elected to represent the Society in the Academy of Sciences.

Owing to the resignation of Mr. Nelson, the Board of Directors subsequently appointed Miss T. Mayer to fill the vacancy created, and Professor Wm. F. Ogburn to act as an additional member on the Board of Directors in Miss Mayer's place.

The newly elected President now assumed the chair and, after thanking the Society, called upon Professor Wm. F. Ogburn to present the paper of the evening on "Dr. Rivers's Correlation of Psychoanalytic and Cultural Phenomena." Professor Ogburn gave an exposition of Rivers's lecture on "Dreams and Primitive Culture" and added a critical examination of its treatment of ethnological data. A lively discussion followed in which Dr. S. E. Jelliffe, editor of the *Psychoanalytic Review*, took a prominent part. Drs. Boas, Parsons, and Schleiter, and Miss Roberts also spoke.

Before adjournment the President welcomed to our midst Miss M. A. Czaplicka, well known for her book on *Aboriginal Siberia*, who had attended the meeting as a visitor.

At the preceding meeting of the Board of Directors it was decided to transfer the accumulated interest of the permanent fund to the current account. It was further passed that the Society henceforth pay the American Anthropological Association \$4.00 instead of \$3.50 for each subscription to the *American Anthropologist*.

Meeting of February 23, 1920

THE Society met in conjunction with the Section of Anthropology of the New York Academy of Sciences at the American Museum of Natural History. Dr. Robert H. Lowie presided. Members present: Gunther, Goddard, Goldenweiser, Donohugh, Reichard, Wissler, Spier, Schleiter, Weitzner, Lowie. Total attendance, 28.

Professor Harry E. Barnes, of The New School for Social Research, spoke on "The Significance of the Newer Anthropology for Sociology and History." The speaker contrasted the older anthropology with that of the modern schools and discussed the extent to which the new conclusions had penetrated sociological and historical circles. His position was that, while sociologists generally had been animated with an interest in ethnological work, they had yet failed to assimilate its later aspects; historians, on the other hand, had on the whole neglected the cultural field entirely, but, thanks to their vigorous methods and logical training those who surveyed anthropological data at all had absorbed the modern anthropological viewpoint. Professor Barnes made

a plea for more earnest collaboration by the votaries of the several branches of knowledge.

The paper was discussed by Drs. Goldenweiser and Wissler and by Mr. Spier.

Meeting of March 15, 1920

THE Society met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences. The meeting was held in Schermerhorn Hall, Columbia University, and Professor R. S. Woodworth, chairman of the Section, presided.

The lecture of the evening was by Dr. W. H. R. Rivers, of St. John's College, Cambridge, England, who delivered an address on "Ethnology: Its Aims and Needs." The speaker expounded the theoretical views held by the new English school represented mainly by Elliot Smith and himself, emphasizing the contrast between the diffusionist position and the "classical" English point of view. The meeting was attended by a large audience, including numerous Columbia professors and students.

Meeting of the Board of Directors, April 16, 1920

THE Board of Directors met in the President's office in the American Museum of Natural History at 5 p.m.

A motion that the Society resume its publication was made and carried.

Professor Boas announced that he had located a publisher who would print the works decided upon at the approximate cost of a dollar a page. The motion was made and carried to appropriate \$300 for the printing of one hundred pages of John R. Swanton's Haida texts and two hundred pages of Paul Radin's Winnebago myths.

The meeting was then adjourned.

Subsequently the motion was made and carried to substitute Prince's Passamaquoddy texts for Radin's Winnebago material.

Meeting of April 26, 1920

THE Society met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences at the Museum of Natural History, with Dr. Robert Lowie in the chair. Members present: Kroeber, Goddard, Ogburn, Mayer, Spier, Gunther, Nelson,

Reichard, Donohugh, Fishberg, and Lowie. Among the visitors was Mr. Barbeau, of Ottawa. The total attendance was forty.

There was a brief business meeting on behalf of the Board of Directors. Dr. Lowie presented the name of Mr. John S. Maynard for fellowship in the Society. He was unanimously elected.

Dr. Elsie Clews Parsons was the lecturer of the evening. The subject of the paper was "An Anvic's Narrative." It was an account of the customs of his tribe as told to Dr. Parsons by an Anvic boy, her sole informant. The age and sex distinctions in the observance of taboos and in the performance of certain definite social obligations were especially elaborated. Shamanistic practices and beliefs were also dealt with in detail.

The paper was discussed by Drs. Lowie, Goddard, and Kroeber. The similarity of certain customs among the Northern Athapascans was emphasized. Dr. Goddard raised the question of the relation between sex taboos and a sedentary or nomadic mode of life. In Dr. Kroeber's opinion the sex taboos among the Athapascans were connected with their more or less rudimentary forms of culture. He pointed out that adolescent and funeral ceremonies, owing to their personal character, are more intense when other phases of culture, particularly the ceremonial, are not so highly developed.

Dr. Boas, who was to have spoken on "The Religious Ideas of the Bantu of Portuguese East Africa," was unable to attend the meeting.

Meeting of October 25, 1920

THE Society met in conjunction with the Section of Anthropology and Psychology at the American Museum of Natural History. There was an unusually large attendance, eighty in all, many of the Columbia psychologists and psychological students being present. The meeting was called to order by Dr. Robert Lowie at 8.30 p.m., and the names of Miss Elsie Viault, Miss Lucy Freeland, Mr. Martin Gusinde, Mr. Paul Louis Faye, and Dr. Bruno Oettking presented for fellowship in the Society. They were unanimously elected.

Professor Cattell, who was to have spoken on "Personal Memories of Wundt," was unable to appear, but sent a brief statement to be read. Professor M. R. Cohen spoke on "Wundt as a Philosopher," emphasizing his services in reestablishing the dignity of philosophy after the speculations of the "Naturphilosophen" had brought it into contempt, and also Wundt's refusal to subordinate intellectual to moralistic inter-

ests. Dr. A. A. Goldenweiser spoke on "Wundt's Contributions to Folk Psychology." He emphasized the progress made by Wundt over his predecessors Spencer and Tylor, first in introducing a more emotional standpoint in his folk psychology, second in laying stress on the social side of language, religion, and other cultural phenomena, and third in his broader and less naively rigid evolutionary conception. His main contribution, however, according to Dr. Goldenweiser, consisted in the introduction of the concept of apperception and everything he derived therefrom. Then a one-time philosophical student of Wundt's, whose identity is unknown, said a few words of appreciation, and finally Professor Woodworth made some informal remarks on Wundt as a promoter of psychological laboratory work.

Meeting of November 22, 1920

THE Society met at the American Museum of Natural History, with Dr. Robert Lowie in the chair. Members present: Boas, Dangberg, Maynard, Gunther, Nelson, Goddard, Reichard, Radin, Lowie, Mayer. Total attendance, 20.

There was a short business meeting. On behalf of the Board of Directors the Secretary presented the names of Spencer Trotter, Leon Godshall, Esther Schiff, Clara Hildeman, W. W. Hyde, George E. Schapelle, A. I. Hallowell, L. A. Harr, George E. Nitzsche, for fellowship in the Society. They were unanimously elected.

Dr. Lowie announced with regret the death of Dr. Wm. Radloff, Director of the Anthropological Museum of St. Petersburg and an honorary member of the Society.

The program of the evening followed. Dr. Lowie made some "Observations on Parfleches" to illustrate the utility of Flechner's method of experimental aesthetics in the characterization of primitive art. The method is chiefly of value for the differentiation of two very similar arts, and so Dr. Lowie chose for his illustration the parfleches of the Shoshone and the Crow, both of which tribes use the central rectangle as decoration. Though the number of parfleches was too small to determine results, there was evident, nevertheless, a tendency among the Crow to use a wider rectangle than the Shoshone employed.

Miss Dangberg then spoke on "The Shamanism and the Mythology of the Washo Indians." She pointed out three stages in the development of a Washo shaman: first, the acquisition of power; second, competition with other shamans—the shaman is killed if he loses a patient;

and the final stage, when the shaman becomes practically infallible—he never fails to ascertain the person responsible for the disease. Miss Dangberg concluded with a brief sketch of the mythological ideas among the Washo, which she said were more closely related to those of the surrounding tribes than were the shamanistic practices she had been describing.

The paper was discussed by Drs. Boas, Lowie, and Goddard, who pointed out certain analogies in the Apache and the California tribes.

Meeting of the Board of Directors, January 19, 1921

THE Board of Directors met in the Hotel Endicott at 1.30 p.m. Present: Drs. Boas and Parsons, Mr. Ogburn, Miss Mayer, with Dr. Lowie presiding.

The Secretary was unable to present a complete report owing to lack of information concerning the standing of the various members.

The Treasurer read her report, which was referred to an auditing committee to be appointed by the President.

The following were proposed by the Secretary as members of the Society: Miss Margaret J. McCoy, of Philadelphia, Pa.; Dr. P. J. Patterson, of Rexford, Kansas; Mrs. Shaw, of New York. As fellows of the Society: Mr. J. Wintemberg and Mr. Diamond Jenness, of the Geological Survey of Canada; Mr. Eldridge R. F. Johnson, of Morristown, N. J.; Mr. Michail Dorizas, of the University of Pennsylvania; and Dr. H. Z. Heronimakis, also of the University of Pennsylvania. They were unanimously approved for recommendation to the Society.

Plans for securing more subscribers to the publications of the Society were discussed. Professor Boas suggested that "El Folklore de Oaxaca" be included in the American Ethnological Society Publications. It was moved and carried that Dr. Lowie appoint a committee to negotiate with the Folklore Society to this end. Dr. Lowie appointed Professor Boas and Dr. Parsons to act on the committee.

As Auditing Committee, Dr. Lowie appointed Dr. Hyde and Mr. Nelson.

A budget for 1921 was prepared and itemized as follows:

For the <i>American Anthropologist</i>	}	\$500.00
For membership dues to the American Anthropological Association		
For publications		160.00
For publicity campaign		25.00
		<hr/>
		\$685.00

As Nominating Committee, the Board proposed the reelection of the present officers:

President	Robert H. Lowie
First Vice-President	F. W. Hodge
Second Vice-President	Clark Wissler
Secretary	Theresa Mayer
Treasurer	Elsie Clews Parsons
Editor	F. Boas
Board of Directors (in addition)	{ P. E. Goddard, A. A. Goldenweiser, W. F. Ogburn

The motion was made and carried instructing the Secretary to ask the inviting body of the International Congress on Eugenics what scientific bodies had been asked to participate in the Congress. The Board of Directors deemed it desirable to have this information before appointing a delegate to the Congress.

On motion of Professor Boas, it was unanimously decided to sell current publications of the Society in Europe, accepting the European currency at par value, provided the Society incurred no financial loss thereby.

The meeting then adjourned.

Meeting of January 24, 1921

Annual Meeting

PRESIDENT LOWIE called the annual meeting to order at 8.15 p.m. The meeting took place in the Academy of Sciences Room of the American Museum of Natural History. The total attendance was twenty-eight.

The Secretary presented the following report, which was adopted as read:

SECRETARY'S REPORT

The present membership of the American Ethnological Society, Inc., is as follows:

Life members	13
Members (in good standing)	12
Members (in arrears)	1
Fellows (in good standing)	79
Fellows (in arrears)	19
Total	124

It has been deemed advisable to retain the names of the non-paying members, since some have been beyond the reach of communication, and the others will, doubtless, meet their obligations in the not too distant future.

The Secretary regrets to announce the death of Mr. Jacob H. Schiff, a life member of the Society.

The usual number of meetings was held during the year, the following titles being presented:

(January) Wm. F. Ogburn, *Dr. Rivers's Correlation of Psychoanalytical and Cultural Phenomena*.

(February) Harry E. Barnes, *The Significance of the Newer Anthropology for Sociology and History*.

(March) W. H. R. Rivers, *Ethnology: Its Aims and its Needs*.

(April) Elsie Clews Parsons, *An Arctic Narrative*.

(October) M. R. Cohen, *Wundt as a Philosopher*.

A. A. Goldenweiser, *Wundt's Contribution to Folk Psychology*.

(November) Robert H. Lowie, *Observations in Parfleches*.

Grace Dangberg, *Notes on the Shamanism and Mythology of the Washo Indians*.

An account of the proceedings of the Society from October, 1919, until January, 1921, inclusive, is to appear in an early issue of the *American Anthropologist*.

Respectfully submitted,

TERESA MAYER,

Secretary

The Treasurer then presented her report, duly audited by the committee previously appointed by the President. The report was adopted as read.

ANNUAL REPORT OF THE TREASURER OF THE AMERICAN ETHNOLOGICAL SOCIETY

January 1, 1921

Receipts

Balance on hand Jan. 1, 1920, in Guaranty Trust Co.	\$ 748.57
Balance on hand Jan. 1, 1920, in Manhattan Savings Institution	2,659.28
Interest from Guaranty Trust Co.	1.06
Interest from Manhattan Savings Institution	100.52
Dues from members	555.12
From "Ojibwa Texts"	35.00

\$4,099.55

Disbursements

Printing and postage "Ojibwa Texts"	\$ 791.36
Goldman, Sachs & Co., Berlin, printing	200.00
American Anthropological Association	
for publications	375.00
for 97 memberships	97.00
Amer. Museum Nat. History	
for attendants	4.50
Guaranty Trust Co. for bank exchange	1.78
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	\$1,469.64
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	\$2,629.91

Total Assets, January 1, 1921

On deposit in Manhattan Savings Institution	\$2,415.12
On deposit in Guaranty Trust Company	214.19
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	\$2,629.91

Respectfully submitted,

[Signed] ELSIE CLEWS PARSONS,

Treasurer

The budget suggested by the Board of Directors was accepted by the Society.

The motion was made and carried instructing the Secretary to cast a single ballot for the reelection of the present officers.

The names of those persons previously approved by the Board of Directors for membership and fellowship in the Society were then presented. They were unanimously elected.

Dr. Lowie thanked the Society for its vote of confidence and then called upon Mr. N. C. Nelson to report upon his recent trip to the Southwest. His investigations this time included a special reconnaissance of the Grand Gulch region of southern Utah and of the Mimbres Valley in southern New Mexico, and he incidentally gathered data on Pueblo ruins and Pueblo ceramics in southern Nevada and at several places in western and southern Arizona. In the Grand Gulch he determined the situation of more than one hundred ancient sites of Pueblo and Basketmaker origin, including burial places, great groups of pictographs, and cliff dwellings of from one to thirty rooms. In the open Mimbres Valley

he located more than thirty-five ruins, essentially pueblos of the northern Mexico type; with large rooms, deep metates, partly grooved axes, and with pottery partly of the Casas Grandes type. He concluded by stating that the general reconnaissance to date had brought to light not less than fifteen prehistoric ceramic centers, the relative ages of which can be provisionally determined without excavation.

Mr. Hodge, Dr. Lowie, and Dr. Goddard discussed the report.

Dr. Goddard next gave a talk entitled "A Dramatic Form of Folklore," which he has summarized as follows:

"The Athapascan tribes in the valleys of the eastern Eel River drainage have a strongly developed dramatic feeling as is shown in their folklore. The passage of time is indicated by repeating the daily routine in outline. The combined lapse of time and space as in a journey is a favorite form. The myths and tales of the Wailaki are told almost exclusively in the form of monologue or dialogue in such a manner that narratives are not necessary for following the action of the composition."

Professor Boas and Dr. Parsons took part in the discussion of this paper.

Theresa Mayer,
Secretary

ANTHROPOLOGICAL NOTES

ANNUAL MEETING OF THE ANATOMICAL AND ANTHROPOLOGICAL ASSOCIATION OF CHINA

At the annual meeting of the Anatomical and Anthropological Association of China, held at Peking on Friday, February 25, 1921, a lecture was delivered by Dr. J. G. Andersson on "Archaeological Research in Inner Mongolia."

The speaker stated that, in the area under discussion, he had been able to establish the following archaeological epochs, beginning with the most recent: (1) The epoch of agricultural colonization, probably Ming dynasty; (2) the epoch of the stone effigies; (3) the neolithic epoch.

The first named is marked by the presence of a number of defense walls, apparently outworks to the Great Wall. They are, however, but small and weak structures which are now entirely crumbled down. The northernmost of these walls lies near Pan-Chiang, 275 kilometers from Halgau, and at the edge of the Gobi.

There are also numerous ancient walled cities and villages, the walls of which have also been reduced to low, grass-covered ridges. Within these enclosures have been found numerous metal objects, such as arrow heads and knives much resembling Siberian types, as well as charms and Chinese coins, mostly from the Sung dynasty.

Agricultural implements have also been found, such as millstones and thrashing stones, as well as plowshares. It is probable that those remains, or at any rate the majority of them, date from the Ming dynasty when the Chinese are known to have exerted a strong influence in this region, an influence which extended even into Outer Mongolia.

What is here called the epoch of the stone effigies is represented by a number of stone sculptures showing standing men of the type which is known from northern and western Mongolia. The age and ethnological affinities of those stone effigies is not known. The Mongols have no tradition concerning them.

A small number of neolithic implements, mostly stone celts, have been found within the area visited by the lecturer.

After the lecture a business meeting was held, at which Dr. B. V.

Cowdry announced his resignation as President of the Association. Dr. Cowdry, whose loss to the Association will be keenly felt, has returned to the United States, where he will in future be connected with the Rockefeller Institute in New York. Dr. Davidson Black was elected President of the Association.

PRESERVATION OF ANTIQUITIES IN THE STATE OF ALABAMA

The following is from the General Laws of the State of Alabama (1915), pp. 729-730:

AN ACT

To provide for the preservation of the aboriginal and other antiquities, mounds, earthworks, ancient forts and graves in the State of Alabama.

Be it enacted by the Legislature of Alabama:

1. That the State of Alabama reserves to itself the exclusive right and privilege of exploring, excavating or surveying, through its authorized officers, agents or employees, all aboriginal and other antiquities, mounds, earthworks, ancient or historic forts, and burial sites within the State of Alabama, subject to the rights of the owner of the land upon which such antiquities are situated, for agricultural, domestic or industrial purposes; and that the ownership of the State is hereby expressly declared in any and all objects whatever which may be found or located therein.

2. That it is hereby made unlawful for any person not a resident of the State of Alabama, either by himself personally, or through any agent or employee, or for any one else acting for such person, to explore or excavate any of the remains described in section one hereof, or to carry or to send away from the State any objects which may be discovered therein, or which may be taken therefrom, or found in the vicinity thereof.

3. That no explorations or excavations shall be made in any of such remains without the consent of the owner of the land first had and obtained, and without such work is done in such way as not to injure any crops, houses or improvements on the land adjacent to or forming a part of such remains.

4. That no explorations or excavations shall be made, which will destroy, deface, or permanently injure such remains; and that after any such explorations or excavations, they shall be restored to the same like condition as before such explorations or excavations were made.

5. That no objects taken from such remains shall be sold or disposed of out of the State, but when removed therefrom, the objects so gathered shall be retained in State custody, and either placed in the collection of the depart-

ment of archives and history, or in the museums or in the libraries of the educational or other institutions of the State, or they may be exchanged for similar or other objects from other states, museums, libraries, or individuals.

6. That any person who shall violate any of the provisions of this act shall be guilty of a misdemeanor, and, on conviction, shall be fined not exceeding one hundred dollars for each offense.

APPROVED September 29, 1915.

THE TWENTIETH INTERNATIONAL CONGRESS OF AMERICANISTS

THE Twentieth International Congress of Americanists, which was to have convened at Rio Janeiro in 1921, will be held in that city August 20 to 30 in connection with the celebration by Brazil of its first centenary of independence. Official announcement to that effect has been made to the U. S. Secretary of State by the Brazilian Government.

It is hoped that a special effort will be made by Americanists in this country to attend the Congress, or at least to become members of it. Applications for membership together with dues (\$5.00) may be sent directly to the Secretary of the coming Congress, Sr. Domingos de Carvalho, Praça 15 de Novembro N. 101, Rio de Janeiro, Brazil, or to Dr. Aleš Hrdlička, Secretary of the Congress preceding, U. S. National Museum, Washington, D. C.

ANNOUNCEMENT BY THE AMERICAN SCHOOL IN FRANCE OF PREHISTORIC STUDIES

THE American School in France of Prehistoric Studies announces that for the School year beginning July 1, 1922, two scholarships are available. Applicants should have some knowledge of prehistoric archaeology, not necessarily in the European field, and some acquaintance with French, but a long course of preparation is not absolutely necessary. The time is divided between excavations, excursions, and study in museums. This is supplemented by attendance at lectures given by French scholars and by the American Director.

Those who consider entering the School, whether or not applicants for scholarships, and whether or not intending to pass the entire year in the School, should, as soon as possible, address the Chairman, Dr. Charles Peabody, Peabody Museum, Cambridge, Mass.

MR. JAMES MOONEY, for thirty-six years a member of the scientific staff of the Bureau of American Ethnology and the leading authority on

the Cherokee and Kiowa Indians, died December 22, 1921, at his home in Washington, D. C. An extended notice of his life and work will appear in a later issue of this journal.

DR. VINCENZO GIUFFRIDA-RUGGERI, Professor of Anthropology in the University of Naples, the most prominent and the most productive of Italian students in his particular field, died December 21, 1921, after a brief illness.

DR. T. T. WATERMAN has received a temporary appointment in the Bureau of American Ethnology, Washington, D. C., and is now engaged in field work among the Indians in the neighborhood of the Kasaan National Monument, Alaska, and other parts of the North Pacific coast.

FATHER WILHELM KOPPERS, co-editor of *Anthropos*, and a specialist on the economic life of primitive peoples, is conducting ethnological investigations in the region of Tierra del Fuego. On his way thither he visited several anthropological centers in the United States, including New York, Washington, and Berkeley.

PROFESSOR ARNOLD VAN GENNEP, formerly of the University of Neuchâtel and well-known for his works on religion, customs, and legends, as well as on totemism, primitive society, and folk-lore, visited the United States and Canada during the past winter and delivered popular lectures in both countries on the ethnography of northern Africa and the folk-lore of Savoy, under the auspices of the Alliance française. At the same time he was enabled to visit all of the principal centers of anthropological activity, meet many American investigators, and deliver lectures before some of the anthropological societies.

MR. JAMES R. MURIE, the well-known recorder of Pawnee ceremonies and the assistant of most of those ethnologists who have conducted investigations among the people of his tribe, died very suddenly at his home near Pawnee, Oklahoma, on November 18, 1921.

DR. H. J. SPINDEN, Curator of Archaeology of the Peabody Museum, Cambridge, Mass., has been appointed Instructor in Anthropology in Harvard University. He will give courses on the use of primitive design in modern industries.

NORTHWESTERN UNIVERSITY has established a lectureship in Anthropology, and Dr. Fay-Cooper Cole of the Field Museum of Natural History has been selected to fill the position.

DR. RUDOLF SCHULLER received a commission from the Mexican Government in December, 1921, to study the culture and the social structure of the Huastec Indians and expected to undertake field investigations among them covering two or three months.

OSCAR MONTELIUS, former Antiquary to the Realm of Sweden, died in Stockholm, November 4, 1921, at the age of seventy-eight. The outstanding accomplishment of his life was the establishment of an intelligible chronology for the Bronze Age in Europe and the region of the Mediterranean.

THE *Bulletin of the University of Denver* for November, 1921, contains an account of an archaeological expedition undertaken during the preceding summer to the ruins of the Cliff Dwellers and Pueblo Indians west of Pagosa Springs. The University was joined in this investigation by the Colorado State Museum and the expedition was under the joint direction of Mr. J. A. Jeancon, Curator of the Museum, and Dr. E. B. Renaud, Professor of Romance Languages. The latter "has been much interested in archaeology and ethnology for several years and has given these subjects careful and thorough study. During the past year he has taught courses in American Archaeology and in the Ethnology of the Indians of the American Plains." Considerable advance was made toward establishing a chronology for the various types of ruins found in the area and towards elucidating the evolution of the culture represented by them.

NATURE of December 22, 1921, p. 548, gives a report of the meeting of the British Association for the Advancement of Science on September 9th, where the origin of the Scotch people formed the main subject of anthropological discussion.

DR. C. G. SELIGMANN, well-known for his researches in Ceylon and New Guinea, has been sent on a third expedition to the Sudan, where he has already investigated the Shilluk and Dinka and will now study the Bari, Acholi, Madi, and Latuka.

ON December 29th, 1921, Dr. Georg Schweinfurth celebrated his eighty-fifth birthday. Hoffman and Campe announce a new book of his, entitled *Auf unbetretenen Wegen in Aegypten*.

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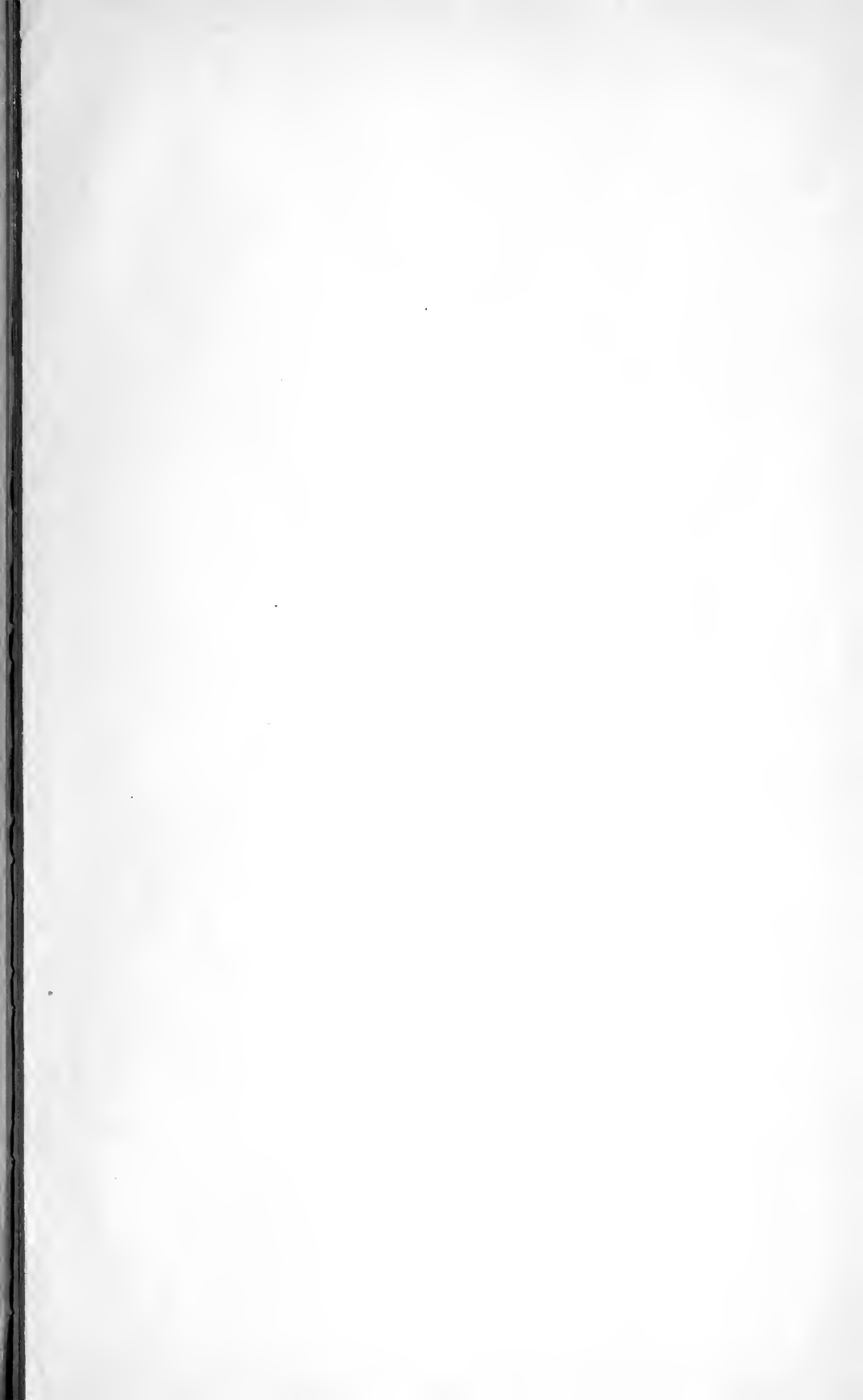
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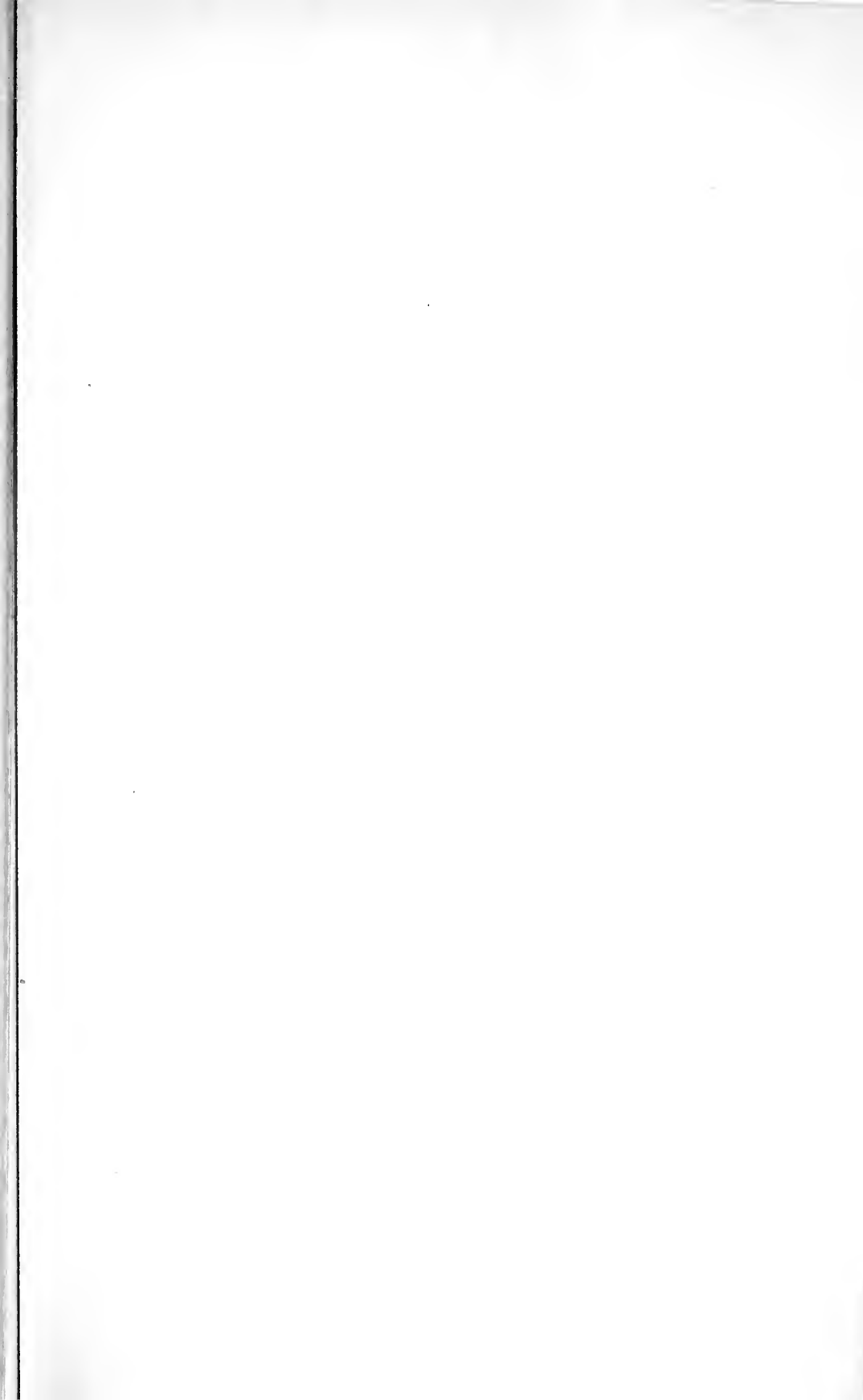
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